

THE MINING AND METALLURGICAL JOURNAL.

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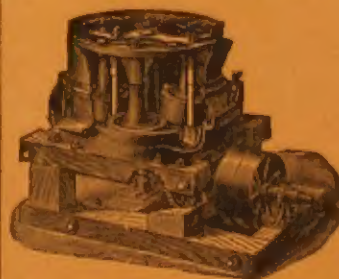


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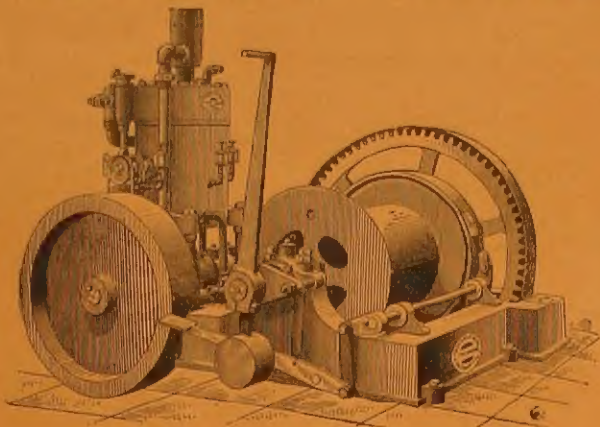
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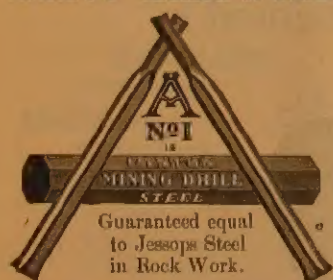
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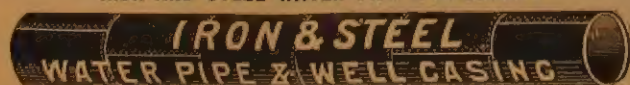
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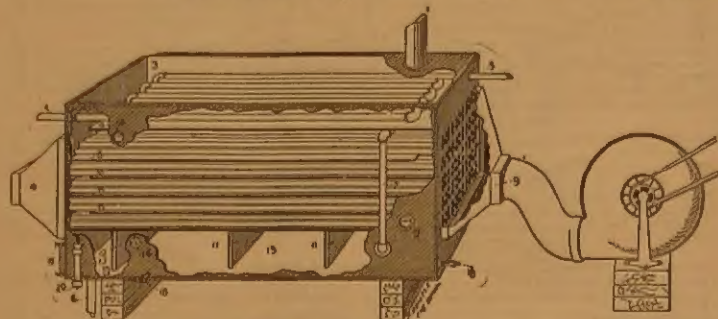
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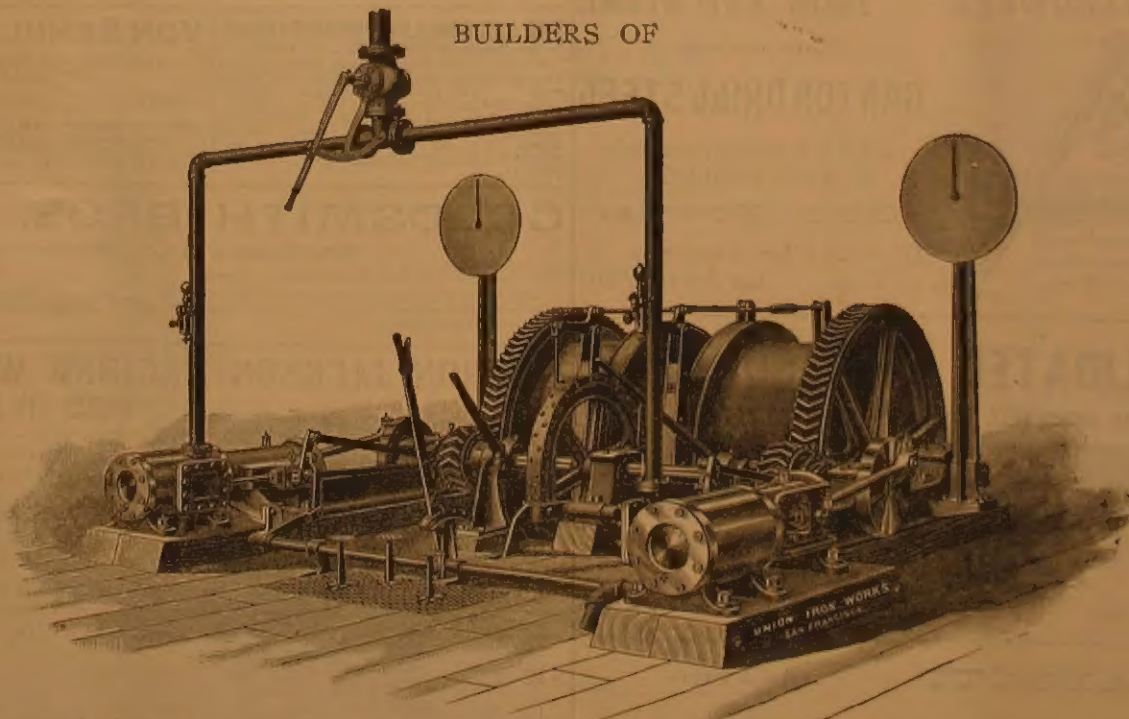
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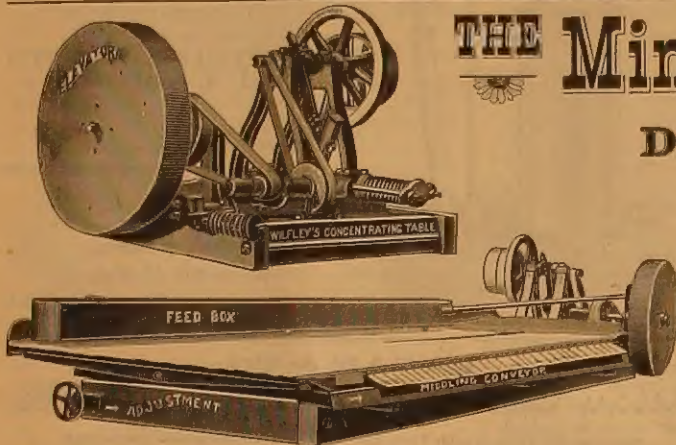
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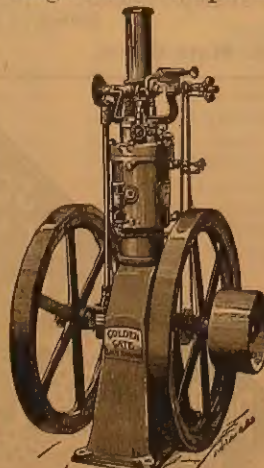
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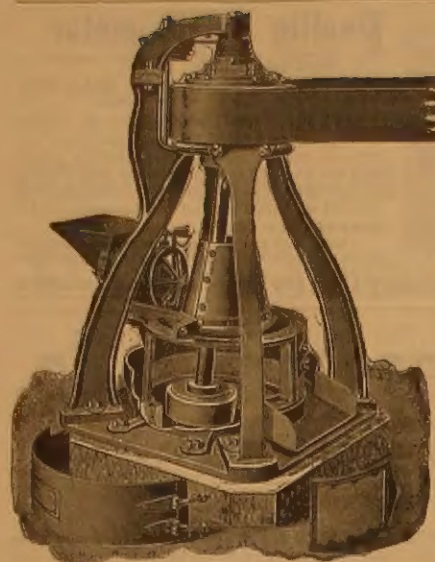
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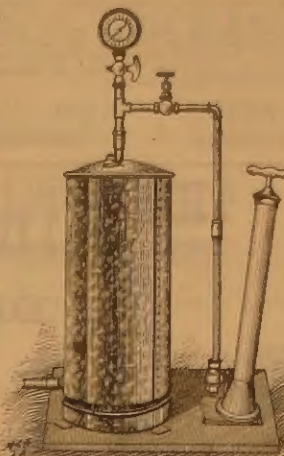
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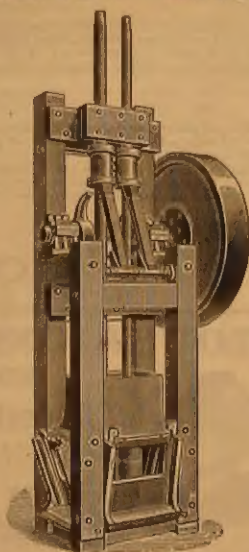


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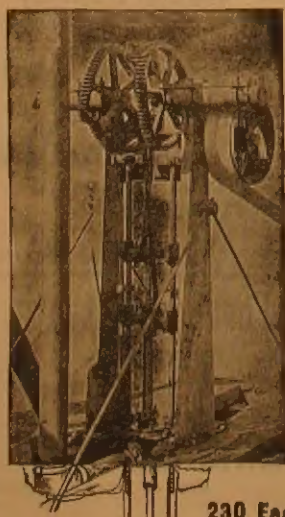
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Mining Engineer and Metallurgist

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SAN FRANCISCO, CAL.

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EASTERN OFFICE 284 PEARL ST. NEW YORK

in mines, and to see that the workings are ventilated and proper means of ingress and exit to the mine are provided in case of an accident to the hoisting machinery, or in case of fire in the mine. When ladders are placed in a working or air shaft, in a vertical position for several hundred feet, by foreman or owner of the mine, for the sake of economy of a little extra timber which would be required if the ladders were placed in a sloping position; such foreman, manager or owners are, according to English mining law, doing an illegal act which endangers the life of workmen. The custom of placing vertical ladders in shafts is only too common in California mines, hence the necessity of these remarks. The ladders ought to be placed in a sloping position from wall to wall of the shaft, or set at an angle of say from 45 to 60 degrees from the horizontal, and a landing place made at the foot of each ladder, the top of the ladders with water, air or other pipes, should pass through the man hole at one side of the ladder. With this arrangement accidents are prevented, and the difficult operation of climbing several hundred feet made more easy and less dangerous.

After a miner has worked his shift, or at the end of a hard day's or night's work, to be compelled to climb up several hundred feet of vertical ladders, is to impose on him work equal to a quarter of a day's labor. Should he become faint or exhausted when on the vertical ladders, his chances of getting to a station or landing are small; but with ladders on the slope, if he falls he can only go a few feet to the foot of the ladder he is on, and the landing prevents his further fall. The exhausting operation of climbing vertical ladders was the great cause of lung trouble among miners in old European mining districts, hence the stringent law prohibiting their use in shafts.

CORRESPONDENCE

CALIFORNIA.

Tuolumne Mines.

SONORA, CAL., Aug. 10th, 1897.

Never in the history of this county did the mines look so well as at present—never in its history were so many mines being developed; never in its history has Old Tuolumne been so productive since the era of quartz mining—we are not speaking of placer mines, which are a class of mines which are quickly worked out. There is no permanency to gravel diggings. Quartz mining is permanent and employs a large number of men, hence supports our mining camps and towns, and creates steady business in all branches of trade. New mills are being added and erected almost weekly. We far outnumber any other county in the number of stamps actually at work, and none of these mills are being put up on the chance of making a mine—as used to be the case in the early days of mining—but the new equipments are being erected as a necessity, the mines being ready and ore in abundance and waiting to be crushed. No county in the state can begin to compare with our golden prospects. No county in the state has as large an output of the precious metal, and that output is increasing monthly and will for years to come; it is the banner county. Klondyke is not in it, "yet fools rush in where angels dare not tread." "Distance lends enchantment to the scene." *Here there is gold, gold everywhere.* Virgin gold lands open for the prospector, upon our

East belt, for the labor of taking them up and developing them—miles of auriferous ground teeming with riches, and a climate unsurpassable, where the miner can work all the year round in comfort and pleasure, and with profit and safety to life. Who, in their senses, should leave such inviting homes for the frozen north? I will, so far as space permits, give my usual brief notice of some of the mines in our East Belt:

THE NORTH FORK

mine is being actively developed, by shaft sinking and drifting. This mine on the surface in the early days was found very rich, but was cut off by a "fault." The vein is now almost in hand; the signs are good that rich rock is now close at hand. This mine is located next to the road leading to the famous Buchanan mine, on the west slope of the mountain range on the North Fork of the Tuolumne river.

THE YELLOW JACKET.

The shaft is down 230 feet. There are two veins, one three feet wide, the other twenty-six inches, high grade—one yielding \$50 per ton. The east vein gave \$20 a ton result from actual mill test. A five-stamp mill crushes all the rock now extracted, but shortly a much larger mill will be needed. This is a valuable property.

THE LOST FOX GROUP OF MINES,

still east of first named mines some ten miles, looks well. A tunnel has been entered over 100 feet. The vein is large and prospects for a full \$10 per ton. A mill is to be erected as soon as possible. The ore dumps are full and ready for mill.

THE BUCHANAN MINE.

This mine has changed hands and is to be started up at once. They have a twenty-stamp mill, and a finely equipped chlorination plant. The former record of this property as a large gold producer is too well known to need any comment.

THE PROVIDENCE.

This property is on the east side of the mountain range of the North Fork of the Tuolumne river. The vein is large and portions of very high grade ore are found on one of the walls. The rock extracted is being placed on the dumps, waiting for the mill, which is to be placed on the mine as quickly as possible. A full force of miners are employed.

THE CONSUELLO.

This mine lies to the south of the Providence. Work is being actively carried on under same management as former mine.

GRIZZLY MINE.

The incline shaft is now sunk 100 feet—vein four feet wide—was very rich in the early days. The old shaft was caved hence it was considered best to sink a new one. Power for hoist is derived from a turban wheel down in the North Fork, and transmitted to machinery at the mine.

THE DEAD HORSE,

opposite the last mentioned mine, is on the west slope; is down 1400 feet. The twenty-stamp mill is continuously crushing on payable rock. The sulphurets or concentrates are shipped to the company's chlorination plant at Angel's Camp and there mixed with the Utica concentrates and treated—the values credited to the latter mine. This Deadhorse, or Old Eureka, is a grand old mine, paying better at the deeper levels than on the upper. Forty miners are employed,

THE LADY WASHINGTON.

This mine has a roller mill. The result of their crushing was far beyond their anticipation. There are three concentrators. The mine is well opened up by tunnels, etc.; has a plentiful supply of good mining rock; power water; twenty-five men employed.

THE HUNTER AND SPRING GULCH MINES

are both being worked. The former is located in Big Canyon. The latter is in the Spring Gulch near by. The Hunter has a ten-stamp mill. The Spring Gulch mill of ten stamps was burned down. The owners contemplate putting up a large reduction plant, as the rock is of low grade quality, and must be crushed to make it pay.

THE SUNNY SOUTH.

This mine is located at Summerville. There is a four-foot vein. The rock contains good value, of which the ore dumps can testify. Gold shows freely.

THE CHARLOTTA MINE.

The vein is a spur west from the Eureka vein. This mine is being reopened. The rock has always paid from \$14 to \$24 per ton. A new equipment is being erected and old shaft repaired.

THE LAURA AND NORTH STAR.

These old mines are to be reopened under good management. These mines can be made to pay well.

THE COLUMBUS OR EUREKA VEIN.

The shaft is sunk 225 feet. The vein carries seven feet of good genial quartz. Active work is being pushed; developing, with good prospects.

THE JOE SMITH MINE.

This is a spur of the Eureka vein on the east. The shaft has been unwatered which discloses a very high grade ore. Active development is now in order.

THE CONFIDENCE.

The old shaft is now cleaned out to the 800 foot level. This is a very flat vein, angle twenty degrees. There are large ore bodies. The new twenty-stamp mill is crushing steadily. There are six concentrators. This old mine paid millions to the lucky shareholders, but owing to disputes, litigation followed, which caused work to be suspended for years. The formation is porphyritic granite. The fissure is ninety feet wide—a vein on each wall and one in the center, making three veins. In places they have come together, but as a rule they are separate. This old mine is now being reopened. With the more perfect system of mining and milling, ore that would not pay in the early days of quartz mining now should pay well. The concentrates of this mine used to be of a very high grade. The free gold rock paid as high as \$30 a ton, and the vein being then over twenty feet wide of course this was a very strong shoot. Unusually so.

The Lower Belt or Mother Lode.

I have nothing fresh to note. I was all through the mines yesterday. Everything is activity. The sound of stamps is heard in every direction.

THE WATCH MINE

is one of the most perfectly equipped mines in that section. The double powerful steam hoist works to the most perfect satisfaction,

Sinking is now being proceeded with, from the 450, and will continue till the 1000 feet mark is reached. The twenty-stamp mill and the ten concentrators work in the most perfect order and efficiency. Space will not permit me to give you any more notes this week, but I will say that if any one doubts the actual prosperity of Tuolumne county let them visit the mining sections as I do every week. They will see what a wonderfully rich region this is. A whole paper could be filled with notes of our mines from actual observation—but it would take a staff of six good writers to give the news of all of our mines in *one issue*. We have hundreds of mines in full blast today—and fresh ones being opened all the time.

East Belt.

THE BLACK OAK.

This is, without doubt, one of the richest mines in the state, 10 to 11 foot vein. Actual value of vein, \$50 per ton. Ore that is shipped to Selby & Co., San Francisco, for every carload of ten tons of ore, \$1000 in gold coin is returned. The owners have just completed a most perfect cyanide plant—the best improved known to science.

THE JUNCTION.

Shaft sunk 73 feet. Size of vein, 3 feet at 70 feet. A level was entered 30 feet south. Good ore in breast. 270 feet southwest of the main is shaft No. 2, now 25 feet deep, here a vein is found from 18 inches to 4 feet wide—all prospects well. The veins found I believe are: the Black Oak and Goldbug. The Soulsby vein is away to the east and has no connection with this system of veins. It matters but little what veins they are, as that does not enhance the value in any way. The fact is, two rich veins are intersected—which makes the junction one of the most valuable prospects in the section. There are so many parallels—I know of two in the Draper, two or more in the mine next, several in the next 40 acres in which is found the Goldbug, then the Black Oak, then the Churchhill, then the Soulsby, then the Bradbury and Johnson, and one more vein still east. ARGUS.

NEVADA.

DE LAMAR, NEVADA, Aug. 6, '97.

EDITOR JOURNAL:—Capt. J. R. De Lamar, who returned from Paris a few days ago, paid De Lamar a visit and made a close inspection of his famous gold mines, which are acknowledged to be the greatest producers on the coast. It is known that the Captain expressed himself as being well pleased with the look of the mines and the management of the same. Immediately after his departure for Salt Lake, Utah, T. H. Oxnam, superintendent of the De Lamar Gold Mining Company, made an examination of the Flagstaff group of mines, also the Magnolia mine. It is generally surmised that the above-named properties will soon form a part of the great De Lamar group. Yours,

OCCASIONALLY.

Strike Settled.

BIRMINGHAM, ALA., Aug. 3.—The Tennessee Company has compromised with its Blue Creek miners, and signed a new wage scale at 25 cents a ton. These mines which are the only ones in the state now idle, will resume at once, giving employment to 1000 men.

Miscellaneous Mining News.

ARIZONA.

Castle Dome Mines.

The big lead mines at Castle Dome are at present being operated by the owners, Gandolfo and Sanguinetti. The Castle Dome Mining Company, headed by Charles T. Trego of Chicago, who held a bond on the mines, which will expire November 22, 1897, will probably relinquish their claim to the mines, as they have not succeeded in working them at a profit.

Their failure, however, is no fault of the mines, which are among the best lead propositions in the country, but rather the result of mismanagement. The property shows up better at present and is in better condition than it has been for years. Lead has raised considerably quite recently, and, for the number of men employed, Gandolfo & Sanguinetti are realizing good monthly dividends from the produce of the mines. There are about thirty men on the pay roll.

The main shaft on the Lola, the principal mine in the group, is down in the neighborhood of 500 feet. Some development work will be done on the Cleveland soon. The group owned by Gandolfo and Sanguinetti consists of thirteen claims.

Frank Vomicil also has a group of seven claims, on which considerable work has been done, and he intends to resume work on them in the near future. They also are bonded to the Castle Dome Mining Company, but as that company has probably given up in despair, Mr. Vomicil will again begin taking out the lead.

Gandolfo & Sanguinetti have established a store at the mines, which is in charge of Rafael Monroy.

The shaft being sunk on George Miles's mine, south of Yuma, is now down 120 feet, and at the bottom there is two feet of good pay rock. Many specimens show quite a sprinkling of coarse gold. This group of mines, the Ninety-Six, Emilie, North Guard and South Guard, is bonded to D. D. Fowler and E. Groenendyke of Pasadena, for \$4,000. The bond will expire on the 1st of November, and from present indications the amount will be paid, as the property is showing up well. If the parties desire to continue developing for another three months before paying for the mine they can do so by adding \$1,000 to the bond.

Arizona has a remarkable deposit of lithograph stone. It is remarkable for two reasons, its extent and the excellent qualities it carries. The deposit was found several years ago, about twenty-five miles east of Mayer, where the large onyx beds are. It has a disadvantage in being located in a rather remote place, and this is no doubt why so little is known of it. The deposit covers 400 acres nearly twice as much space as the onyx beds cover. A marble strata covers the lithograph rock. This is about eight feet thick, and would constitute an industry in itself. The lithograph rock begins directly under this layer of marble and runs to an unknown depth. No development work has been done. There are several claims which cover the entire croppings. They are owned by Joe Mayer and a number of ranchers.

This is the first discovery of lithograph rock known in the United States. The rock used in this country comes from Bavaria prin-

cipally. It varies in cost from \$5 to \$20 a square foot. For the finest color work the best rock to be found is used. Comparison of the Arizona rock with that of Bavaria shows a striking similarity. It is difficult to distinguish the one from the other. As far as the development work has gone here, the rock appears to be firm and in continuous stratas, which will allow large blocks to be taken out in an almost perfect state. It is only another instance of the need of capital in Arizona.—*Phoenix Republican*.

The group of gold mines owned by F. A. Seabert and F. A. Drake, about five miles south of Tucson and one mile from the Santa Cruz river, give promise to be large producers of the precious metals in the near future. The ledges are immense, being from twenty-five to one hundred feet in width. Several experienced mining men have examined the properties and pronounced them very promising.

The new owners of the Tennessee mine, at Chloride, Ariz., went out to take charge of the property last week. Their intention is to begin operating the property right away.

It is reported in Kingman that the White Hills Company has struck an immense body of water in the Treasure mine, and, to clinch the matter, an ore body of sufficient magnitude to keep the new forty-stamp mill pounding away for a year or two has been blocked out. So far all the openings in the big group of mines show ore.

CALIFORNIA.

AMADOR COUNTY.

The management of the Amelia Mining Company purchased a boiler and engine from the Ford mine, near San Andreas, and are now putting it in place preparatory to sinking 500 feet.

John Cueno has discovered a good ledge on his ranch above New York ranch, and under the management of his son, Lorenzo, is running a tunnel to prospect and tap the ledge at a good prospecting depth.

Recently Frank Sullivan and E. H. Young have made an agreement with Parker and Thomas, of the Live Oak mine, on Stony creek, to work on that property. They have a fine ledge, and this week have devoted their time to erecting an arastra. They have about two feet of ledge, which will produce about \$100 per ton.

KERN COUNTY.

A miner came into Bakersfield from Lone Pine, Inyo County, and reports that a miner found two \$1500 nuggets up Tule canyon.

The Colorado Gold Mining and Development Company filed articles of incorporation last week in the county clerk's office. The principal place of business is New York City and the company was incorporated under the laws of West Virginia. The term of the incorporation is fifty years, and 500 shares of stock, of the par value of \$1.00 have been subscribed by the following five directors appointed for the first year: John J. Shafer, J. Grant Lyman, Wm. E. Rhodes and Henry C. E. Stuart of New York, and Thomas C. Perkins of Hartford, Conn. They have paid in

\$50, and desire the privilege of increasing the capital stock to \$2,000,000.

Alex. Hamilton has sold to Charles A. Morris, for \$225, the Ninety-nine, One Hundred, Prescott, Gandelupe, Sunken Ledge and Black Lead quartz mines and the Black Lead and El Paso mill sites, all in the Radermacher mining district.

J. M. Dover was in Bakersfield from Greenhorn with some sample rock from his mine. At a depth of 38 feet he has a 3-foot ledge, and says it assays between \$200 and \$300 per ton. Several tons will be taken to the Waugman mill soon, and when it is worked, Uncle Jim will know whether he is a millionaire or only up in the hundreds of thousands.

Randsburg Notes.

Dean & Brand have completed their eighteen-ton cyanide plant at Kane Springs and started up last Tuesday.

A stamp mill will be erected at Johannesburg almost immediately by Los Angeles parties.

A contract has been let to Evans Bros. to sink a shaft on the upper ledge of the Val Verde and the work is now in progress.

Billy Langdon returned from the Panamint last week, and brought with him some fine samples of gold, silver and copper rock from that country.

E. Lee Allen, manager of the Little Butte mine, has been showered with congratulations this week upon the rich strike made in that mine last week. In the first place, it is the deepest strike yet made, the rich ore being encountered at a depth of 280 feet. By examination of the property just made, there was found a good strong four and one-half foot vein of ore in the bottom of the shaft at the 280-foot level, samples of which taken at random, horn well in every instance. Hardly a piece of ore as large as a walnut can be taken up which does not show free gold in abundance, and it is deemed no exaggeration that the ore without sorting will mill, at the least calculation, \$100 per ton. Of course, specimens may easily be found which will run several hundred dollars per ton, but when spoken of as above, the entire ledge is included. This strike conclusively proves to be most conservative, that the Wedge and Kinyon ledge runs clear through the hill westward from the latter mine, and the Little Butte is fortunate in having the vein the entire length of its full claim of 1500 feet. It is the intention of manager Allen to continue sinking with the present hoist till a depth of 400 feet is attained, when the whim now in use will be moved to the westerly end of the claim and a gasoline hoist put in at the present workings. —*Miner*.

Kern County Klondyke.

F. Eugene Gladwin, superintendent of the Three Chimneys mines in the Keysville district, came down to Bakersfield, August 4th, with a modest little gold brick of \$1144 taken out of 4½ tons of ore.

In talking over the mining interests of Kern county he said, "If all the gold and silver taken out of Kern county in the past three years could be put in the hands of a few men, and sent to San Francisco in one steamer, it would create a sensation equal to that of Klondyke. It must be borne in mind that the gold which came on one or two steamers from Alaska represented, with the

exception of Berry's, the hard work and suffering of three years, as most of the miners had been there that long. Bullion has been going out of the Keysville and adjacent districts steadily for that long and very little has been said. Waugman with his two clean-ups, of \$3100 and \$3600 and this little one of mine, all in the last few weeks, are only incidents in the history of what similar mines throughout the mountains of Kern county are doing."

Mr. Gladwin is undoubtedly correct, but there is no way of even approximating the amount of bullion which comes up now. Up to about a year when the Wells Fargo express from Kernville was robbed of several thousand dollars worth of bullion, that company might have given some idea of the product of the mines. But owing to the dangers the express business was discontinued, and each man brings his own little cleanup out very quietly. Then too, this is a poor man's mining country. A very small grub stake will carry a man until he makes a location, and if he goes broke while working a claim, it is only a few hours back to the valley with plenty of work at good wages to make another stake. Oh, no! when the fever to mine threatens to consume our superfluous energy, we will try the salubrious climate of Greenhorn or the auriferous ledges of Randsburg rather than Klondyke. —*Bakersfield Echo*.

RIVERSIDE COUNTY.

Twenty men are employed putting in the new machinery and repairing the old mill, of the Escondido mine for the Du Quesne Mining Company of Pittsburg. They are also retimbering the old shaft.

A new stamp mill is being erected for M. E. Betherum of Perris upon his large gold mine near the Good Hope.

A 20-stamp has been arranged for by the Gavilan syndicate and the Riverside Gold Mining company.

SAN BERNARDINO COUNTY.

The strike at Dell camp on Old Baldy near Ontario bids fair to cause considerable trouble. G. A. Smith of Los Angeles has commenced suit against the owners for damages. Smith claims that he had a bond on the property for \$38,000, and the owners Messrs. Slanker & Grable have given a bond to James Beckett and Peter Fleming, also for \$38,000, who have paid \$1,000 down. They expect to erect a mill upon the property and propose developing the same. The ore will average \$68 gold per ton, and the vein is said to be 70 feet wide.

Twenty-five men are working on the Green Lead Mine and the mill will start up in a few days.

James W. McHaney and brother W. McHaney the discoverers of the great Desert Queen mine east of Banning have just made another rich strike in the Pinon district near 29 Palms of a large body of ore going \$720 per ton gold.

SAN DIEGO COUNTY.

O. J. Ellsworth is getting \$40 rock out of his mine 28 miles southeast of San Jacinto.

Harry Dannals and Harry Hays have started a little Klondyke of their own east of Campo.

John J. Hickey, who has been prospecting for the past weeks in the Mesquite district, in San Diego county, was in Yuma the other day for fresh supplies. He left shortly afterwards for his old camp as he is well satisfied with the country.

Major L. C. Moreland of this city and partner A. A. Robinson have secured the Bay Horse mine in the Mesquite district from T. F. Moore and W. S. Standish.

COLORADO.

(Extracts from the Mining Record.)

OURAY COUNTY.

F. W. Bushman has just completed a tramway 1,400 feet in length, connecting the Speedwell with Sky Rocket mill, and in a few days that enterprise will be humming away on Speedwell ore. The mill has a capacity of thirty tons in twenty-four hours, and will treat the pyritic ores of the Speedwell by both amalgamation and concentration. The crude ore varies from \$10 to \$25 per ton, and Mr. Bushman is confident of making the enterprise pay handsomely.

The Commodore Foote sent down a car of high grade ore for shipment to Denver last week. The ore-streak in the Foote continues to hold its own in quantity and quality as development progresses.

The strike at the Bold McIntyre, being operated by Buskirk Bros. et al., and situated in the big blowout below Ouray, is even of more importance than at first reported. But 100 feet remain to be driven in order to reach a continuation of the formation from the American-Nettle and O. & N. The vein is now frequently broken up by numerous pockets of high grade mineral, recent assays from which have averaged seven ounces gold per ton. In the breast, the vein of ore is five feet in width and is rapidly improving both in dimensions and quality. A sample lot of this was sent to Denver last week for a test mill run, returns giving \$120 per ton in gold. A trail is now being constructed, which will require some weeks to complete, owing to the extremely rough nature of the locality.

There has never been any question regarding the success of the Fowler smelter, so far as the process is concerned. Matte smelting is older than the hills, and the Fowler plant represents the ripened experience of years of experiment, embodying the latest improvements in furnace and its auxiliaries. The Fowler smelter's success will be limited only by the ore supply. Mine owners of this district who will not get out their ore are the drawbacks. The smelter must have 100 tons of ore per day to run successfully. That means 3,000 tons per month. The mine owners and prospectors will have to hustle to keep the fires going at the smelter.

EL PASO COUNTY.

Cripple Creek Notes.

Lessees have struck good ore at eight feet in the Comstock. Two feet of ore carrying sylvanite.

The Granite shipped 550 tons of pay ore during July.

The Ironclad output is nearly 500 tons per month of \$35 ore.

The Fanny B. is getting ready eighteen tons of medium grade ore for shipment.

The rich strike of sylvanite ore reported last week on the Lucky Guss on Bull Hill continues to steadily improve with develop-

ment. Over fifteen tons of ore have been saved and a trial shipment was sent out early this week.

Rutledge and Glace, leasing on the Rattler, are drifting on a three-foot vein at a depth of about thirty-five feet in their shaft, which has been sunk in the wide cut north of the main shaft on the Rattler, and from which a large tonnage of mineral was at one time shipped. About twelve to fifteen tons of ore has been piled up in the bins which will average close to \$30 a ton.

Wanamaker & McGill, who have a lease on the Vindicator dump, made a carload shipment of ore early in the week. The ore is expected to run about \$20.

The Gold Dollar shaft house, which is a pretentious affair, is rapidly nearing completion, and a fine new plant of machinery will soon be started up. The tunnel was driven to the shaft this week, and cut the latter at a depth of 174 feet. This insures an abundant supply of fresh air. A steady output of a good grade of ore is being made.

The Noble, Crooks & Buckley lease on the Orizaba has shipped a car of very high grade ore. The Lessees have been doing a great deal of dead work of late, which will enable them to greatly increase their output in the near future. They are now crosscutting at the 100-foot level to cut the ore chute and open up new stoping ground.

The Golden Cycle Company shipped about 1,200 this month from the Legal Tender, and is in shape to double that output at any time there is market for the product. The opening of this property into one of the heaviest producers of the district is one of the best examples of what money and work will accomplish in Cripple Creek.

PARK COUNTY.

A number of reorganizations of mining companies in the Alma districts, affecting old and new properties, and embracing plans for extensive development and operations, indicates renewed interest and activity. Another month promises to see many additional properties at work.

The A-Grippi placer, on the east slope of Mount Bross, taken up a year ago by Hon. James Moynahan, is making a 300-yard ditch through which to run water, and doing other preparatory work necessary to a busy season's operations next year. Half a dozen men comprise the present season's force.

The Hock Hocking has added another four-horse team to its hauling outfit this week. This makes four teams, with a two-trip haul, the daily output being thirty-two tons. A few more such mines will make Mosquito district worth looking after, and there are a number of prospects now which show strong symptoms of coming wealth.

The Centennial, on North Star, is working three men. J. C. Brooks leased this property from H. S. Standard of Denver. The mine has a sixty-foot shaft. The northeast side tunnel, which is connected with the shaft, is driven 200 feet. There is another tunnel on the southwest side, which is 160 feet. The present ore showing in the mine is very fair.

H. R. Smith of New York City, who organized the great London company years ago, has been looking after his property in South Mosquito, and expects soon to commence extensive development work on the same. Mr. Smith has six or more of the choicest claims on the London vein and can without doubt commence shipping ore within thirty days after resuming work, as it will take about that

long to clean out and timber the old workings. South Mosquito presumably has the great gold deposits of this district.

SAN MIGUEL COUNTY.

The North American Exploration Company which last fall bonded the Eldorado group of properties, Trout Lake district, owned by L. C. Leslie, has a force of men employed on development work under the superintendence of Mr. Leslie. The Eldorado vein, ten or twelve feet wide, has been intersected at a depth of several hundred feet by a tunnel crosscut, and the drifts on the vein both ways have exposed four to six feet of soft, decomposed ore matter that runs well in gold. The indications point to this group becoming a valuable gold producer after it is more extensively developed and equipped with a mill for the treatment of the product.

Andy Fell and James Morgan are leasing in the upper levels on the Ophir side of the Gold King mine and are encountering the richest ore of any of the lessees on the property. Their mineral is treated at the Ilium stamp mill, near the town of Ophir, and as a general thing it averages from \$60 to \$65 per ton, although one large lot milled some time ago ran \$81 on the plates per ton. They will soon have out another large lot of the richest ore taken from the property for several years past.

Fred and Charley Beck, who are leasing in the upper levels of the Gold King, continue to take out \$35 to \$50 gold ore, which is piled up at the mine until several hundred tons have accumulated, when it is hauled down to the mill for treatment. A large lot of their ore put through the mill a few weeks ago ran from \$15 to \$30 on the plate per ton. The Gold King mine is almost strictly a free milling proposition, and the mill is not equipped with concentrating machinery, consequently no effort is made to save the small quantity of concentrates the mineral yields.

BOULDER COUNTY.

Ward

Frank S. Rearden and N. C. Merrill have men engaged in development work on their Timberline mine.

The Modoc is still operating with only a small force and running but ten of the thirty stamps in its mill.

A large force of carpenters and other workmen are rushing the building and placing of machinery in the San Blas mill.

Messrs. Durbin and Lewis of Lafayette are making good progress in sinking on the Free Gold claim, a property under bond and lease from Fred Harry.

Mitchell and Light have encountered a good pay streak of fine iron ore in the bottom of the Cardiff mine, the width of which varies from six to twelve inches.

The Giles has set a small crew to drifting east and west in the 250-foot level of the mine, opening up new ground for leasers. The leasing system in the Giles has generally proved satisfactory to both miners and mine owners.

Manager Fishback reports a strike of good ore in the lower level of the Catham, sixty feet east of the shaft, where a pay streak some three inches in width appears to be steadily leading into solid iron of that thickness.

C. F. Maddar has secured the Green Mountain lode of C. A. Todd and Johnathan Bambaugh and put men into the shaft to develop the claim. He has added the Tomabawk No. 1 and Tomabawk No. 2 to the property, making a promising looking group.

P. Gillespie has disposed of his Peach Blossom claim near Quigleyville, to Mike Monk, the consideration being \$250. The claim is opened up with a fifteen-foot shaft, in the bottom of which is a vein five feet wide, with a good-sized pay streak giving assay returns of \$9.60. Mr. Monk intends to put the shaft down to a depth of 100 feet.

LOWER CALIFORNIA.

All arrangements for the development of the sulphur deposits near the Colorado river, in Lower California, have been made and work will shortly commence on the mines. They are the property of Mr. Anthony Godbe of California, and have been leased by him to the Mexican Sulphur Company.

MEXICO.

(Extracts from Mexican Trade.)

HIDALGO.

It is estimated that last year the output of silver from the Pachuca mines was fully \$8,000,000, of which \$6,000,000 was treated in the vicinity and the rest in the form of ores was shipped to the United States and Europe.

During the last year Pachuca received considerable set back, owing to a drift in one of the mines striking a tremendous reservoir of water, which practically drowned out several of the principal mines of the district. However, now powerful pumping machinery has got the better of the trouble, and last advices show the water to be gradually going down.

JALISCO.

J. R. Williams, of Youngstown, Ohio, formerly of St. Louis, Mo., has organized the Colorado Mining Co., Youngstown, Ohio, with a capital of \$100,000 gold, to operate valuable mines near Ameca, in the state of Jalisco. Mr. Indegrove, of Youngstown, has been appointed general manager of the company, and is already in charge of the property. Machinery has been ordered and will soon arrive and work will be pushed to the utmost.

The San Vicente Mining Co., of Corry, Pa., has bought the San Vicente mines near San Martin, in Jalisco, and will erect a mill at the cost of \$20,000 gold. They will begin work in November. J. R. Williams, the former owner, through the medium of F. L. Bliss, sold the property in question to Clark L. Hammond at Corry, Pa.

SONORA.

The consummation of another large deal in mines is announced from Hermosillo. The interested parties are Kansas City and Colorado capitalists, who purchased a group of rich gold properties situated in the Altar district, this state. The consideration was \$1,400,000. The purchasers propose to put in new machinery and work the mines on a large scale. One of the mines was worked by the Spaniards over 100 years ago, and has produced a fabulous amount of gold ore.

The new twenty stamp and 5-foot Hunting-ton mills are now working the new extension

of the Amarillas mine in Sonora. The tramway between the Amarillas and Grand Central is about completed. A great body of ore has been struck in the west drift of the Amarillas on the 500-foot level, which is being run to connect with the Grand Central shaft. The Grand Central shaft is connected with 400-foot level of the Amarillas now.

Since April, 1896, the production of both bullion and ores in the state of Sonora has steadily increased, and the records of the Sonora R. R. Co., show an increase in the freight and general traffic of 30 per cent over that of the year before, month by month. The search for mines has progressed steadily, and several important acquisitions have been made by investors of note, among which was the sale last August to the London Exploration Co. of the Grand Central and Amarillas property, at Minas Prietas, for \$1,000,000, gold, of which \$750,000 was paid in cash. Another event of importance was the recent acquisition of the Santa Elena gold mines by English capital.

ZACATECAS.

It is stated that the San Cristobal silver mine at Zacatecas has just been sold to a New York company for \$200,000, gold, the former owner, Mr. Anthony Bray, still retaining a quarter interest in the property.

MEXICO.

The Alacran mine of Zacualpan, in the state of Mexico, is now shipping ore to the Lewis Co. agency at Toluca, running 850 ounces of silver and 6.5 ounces of gold per ton. About six earloads of this ore have been shipped during the past three months, and the company is paying monthly dividends of \$1,000 per vara.

MICHOACAN.

Some time ago, we announced that the Rio Tinto copper mines in this state had been sold. We are now in a position to inform our readers that such is undoubtedly the fact. The principal owner of the property mentioned is Mr. Charles Eisenmann, the gentleman who some twelve years ago sold the famous Boleo mines of Lower California to the company of the same. Oddly enough the purchasers of the Rio Tinto property comprise many of those who were the original purchasers of the Boleo mines, including the Rothschilds of Paris. It is the intention of the Rio Tinto Company to build a railroad from the mines to the Pacific, and to work the mines on a very large scale. Further particulars will be given later on.

The *Evening Telegram* of the City of Mexico publishes the following sensible view of the Klondyke fever:

SIR:—I have read with much interest the reports of rich gold strikes in Alaska, but I want to inform your readers that, from four years experience in the Yukon and other districts in Alaska, I am convinced there is much more talk than gold. I am now engaged in placer mining in a crude way in the state of Guerrero, Mexico, and I can safely say that we can take out more gold here in one month than they can secure in the short season in Alaska.

Alaska is so frightfully cold during eight months of the year that it is well nigh impossible to prosecute the work, while in Mexico we can work every day in the year.

The section where my properties are lo-

cated is the most agreeable climate in the world. We have more water than we know how to handle during our rainy season, and during the dry season more than sufficient to work with.

I venture to say that if these Guerrero "diggings" were at all accessible, and our northern neighbors knew of their richness, etc., Mexico would receive a boom far superior to that of Alaska.

To give you some idea of the richness of our "digging," I took out, during the month of May of the present year \$24,000 in gold, which assays 790 to 800 fine.

This amount is the largest output for any month yet worked, but we seldom run below \$15,000 gold per month. Our labor consists of Indians, at 37 cents per day, and each man washes through our small sluices from four to six yards of dirt per day.

I have not written the above with a view to boom Mexico, neither have I placer claims for sale.

In conclusion, I desire to say that in my opinion Mexican placer "diggings" will, ere long command the attention of legitimate placer miners. At any rate, I sincerely trust that we shall never resort to the old trick of creating a fictitious boom, such as they are evidently having in the Klondyke district at present.

My advice to all who want to become rich quickly, by gold digging, is to do as I have done, come to Mexico and locate along the gold-bearing streams in Guerrero, but don't get excited over a little dust and think you have a bonanza. AN OLD CALIFORNIAN.

A despatch from Hermosillo, Mex., says the party of California prospectors who went into the Yaqui Indian country two years ago and discovered rich placer gold on the Batopilas river, have secured a title to the property and begun work. Four members of the party took out \$140,000 worth of gold in eighteen days. The news of the big strike reached here this morning, and arrangements are already being made for a big expedition to the new El Dorado. The district is difficult of access by the mountain route, but can be easily reached from the coast by going up the Yaqui river by boat.

Mr. N. H. Terry came into Tombstone last week, from the San Bernardino ranch, confirming the information of a rich gold strike being made in the Yaqui country. It seems all is quiet now in that section, no more wars or rumors of war. All that country from the Minas Prietas east to the Mulataes and south to Culican is one immense mineral deposit. Tom Cochman held mines south of the Yaqui river which were reported very rich. Now, since the Yaquis have made peace with the Mexican government and taken lands in severalty, the prospector is abroad in that land of gold, and as the strike is a noted one, Mexicans are also flocking to the new discovery between the Yaqui and Maya rivers. Verily this is a year of gold.

A Mining Deal.

E. J. Callahan, the Ameca (Jalisco) mining man, is in the City of Mexico. He has just sold the Barranca mine to Chicago parties, who put up \$100,000 earnest money. This is an important silver and gold proposition.

A big mining deal has been consummated in the state of Sonora, in which Capt. Lew Friend transfers a half interest in his valuable mining property in that state to V. An-

drus, of Kansas City, Mo., for the sum of \$50,000. One half of the amount is to be paid to Capt. Friend and the other half to be put in developing the property and constructing a small mill.

A short time ago Mexican prospectors went into the southwestern part of the state of Puebla in search of copper properties. Advances have reached the City of Puebla that they have made a rich strike in an old abandoned Spanish copper mine, which was worked a century and a half ago. A large number of prospectors are going into the new district.

The Mexican Ore Co. are putting in a new Otto Gasoline engine with a capacity of nineteen horse power, which is just double that of the one it is put in to replace. The ever increasing business of this popular company has compelled them to increase their sampling works that they may treat the large quantities of ore they are daily receiving at their depot without unnecessary delay.

NEVADA.

A Nevada Bonanza.

Before a shipment of Bullion had been made from the DeLamar mine in Lincoln county, nearly \$800,000 had been expended on the property but now, however, the property has developed into one of the most productive in the West a camp of 2000 has grown up and the output of the mines is variously estimated at from \$200,000 to \$300,000 per month. Captain DeLamar has been tendered \$5,000,000, but this was not his price, and he continues to bank a small fortune from that source with each recurring month.

The Numa Mine.

Some very rich gold and silver ore from the Numa mine, located in Emerald county has recently been encountered. This mine was successfully worked in 1862, and a large amount of ore was then taken out. On sinking upon the ledge, at the depth of 224 feet a large body of water was encountered, and the facilities then at hand not being sufficient to keep the shaft clear, the work of sinking further ceased. Later on the mine was closed and has comparatively lain idle all these years. About a year ago the property passed into the hands of some San Francisco gentlemen, who have done much development work, running one tunnel 424 feet to intersect the old shaft which was struck 156 feet from surface, draining the ledge to this point for about 100 feet, taking out as they progressed a large amount of very rich ore. Seeing that they had several hundred feet of dry virgin ground from this drift to surface, indicating thousands of tons of rich ore, they abandoned for the present sinking deeper, giving their attention to the ground near the surface, where they are now taking out large quantities of gold and silver ore of fabulous richness. From two and a half tons of ore originally taken from the surface, a bar of bullion valued at \$1000 was obtained. While thousands will go to Klondyke, as distant lends enchantment, in search of phantoms, the development of the mines of California and Nevada will keep in the even tenor of their way, extracting untold thousands from these, the banner states of the Pacific. The mill at the Numa mine has just started with 1100 tons of ore now upon the dump, with sufficient in sight for continuous running.—*Silver State.*

NEW MEXICO

(Extracted from *Silver City Enterprise*)

Gold Hill Notes.

The new mill upon the Western Belle mine has been completed. The mill consists of a rock crusher, one five-stamp battery and two improved Frue vanners. The motive power is furnished by two gasoline engines, one of which will be utilized to run the mill and mine and the other to run the hoist and operate the air compressor and Burleigh drill at the mine. The Burleigh drill at the mine will be started soon and rapid progress in the development and extraction of ore is expected. The Western Belle has always been considered one of the best mines in the Gold Hill district. The mill will be started just as soon as a sufficient ore reserve has been extracted. Superintendent Weber is giving the business close personal attention. His employees speak in the highest terms of the gentleman.

Cooks News Notes.

Wm. Kieff, the mining operator, who has acquired a fortune from the lease upon the Othello and Desdemona mines, is now instilling new life into the camp, by purchase and development of several properties which have heretofore been allowed to lie idle. He has purchased the Aztec mine from Hiram Terrell and has let a contract for 100 feet of development work. He has also purchased the Clara K. Mine from James McKinney and Frank Garrett. A contract for a 100 feet of development work has just been completed and a few men are now employed in farther exploration work.

The Quartzite and Robberee, two mines recently acquired by purchase from C. E. Miller, who now has a contract to do 100 feet of development work upon the Quartzite; while Hugh Teel will do a similar amount of work upon the Robberee. Hiram Terrell has just completed a 200-foot contract on the Mammoth mine for Mr. Kieff. Frank Terrell is also employed by him driving a 100 foot contract upon the Lone Wolf. Kieff and Taylor have just finished sinking a 20 foot shaft upon the Bryan mine. Mr. Kieff is doing more to develop the mineral resources of Cooks than has ever been done by any individual for a camp in New Mexico. In addition to the foregoing, Mr. Kieff has kept 140 men constantly employed in and about the Othello and Desdemona mines during the past 20 months. He has met with success and deserves it.

Central Items.

Negotiations have been closed for transfer of the Texas mine to a syndicate of Philadelphia capitalists for a large cash consideration. The Texas mine has been a paying proposition from the grass roots. On the 300-foot level, the deepest working on the property, there is a streak of ore, 8 inches in width, which runs from \$200 to \$300 per ton in gold and silver. The low grade ore between the walls, aside from the rich streak mentioned, runs from one and a half to two feet in width, and will make a good paying concentration proposition.

From Mogollon.

The Confidence mine is running with a full force of miners and keeps the mill constantly at work day and night. The flanges for pipe connections on the water power pipe-line have arrived at Silver City and are stacked in W. A. Smith's corral, awaiting transportation by teams to Graham. The steel pipe to

convey the water to the mill is expected on every train. This company, together with the Graham Mercantile Company, now has 600,000 pounds of freight in transit from eastern points. As soon as the pipe arrives work will be commenced on the new water power system. This will greatly cheapen the cost of reduction of ores at the mill, as also lessen the cost of production of ores at the mines. Besides furnishing the motive power to run the mill, the water system will be utilized to run the dynamos, which will generate power with which to run electric hoisting engines at the mine. Electric lights at the mine and mill and in the company's buildings will be furnished by the same means. When completed this will be one of the most economical mining and milling plants in the United States. L. R. Hope, a competent hydraulic engineer, arrived from Denver, Colo., and went to Graham, where he will superintend the erection of the new water-power plant.

The Maud S. mill is running full time as at last reports, and the mine is showing ore of good grade in the stopes. Shipments of bullion continue with monotonous regularity.

Hanover Mine.

The Hanover mine continues to show improvement as development progresses. The ore body is large and of fair smelting grade. About 30 men are employed at the mine.

Santa Rita Budget.

Nothing new to report from this camp, the Gilchrist lease upon the Guadalupe, Chino and Oxide mines continues to produce its regular quota of about ten tons of copper ore per day, working 30 men. The Driscoll Company is producing about six tons of copper concentrates from the Carrasco dumps, with 20 men employed.

Pinos Altos Properties.

Eighty miners are employed upon the Hearst properties. The mines are showing up as well as could be desired and exceeding the expectation of the owners. The camp in general is in a very prosperous condition, every miner at work is producing far more than wages in gold bullion as the result of his labor. New locations are being made every day and times are like they were in the early days.

UTAH.

Park City Notes.

The board of directors of the Constellation Mining company have levied an assessment (No. 15) of 1 1/4 cents per share on the capital stock of the corporation, payable immediately.

The lessees of the Alice, which is located a short distance up Woodside canyon, are still sinking on the ground, the shaft having reached a depth of 300 feet. When it reaches the 400 level, a cross-cut will be started to cut the vein, at which point the management expects to find it loaded with pay ore.

Following are the ore shipments from the McIntosh Sampler for the past week:

Ontario first class.....	148,540
Silver King.....	410,380
Silver King concentrates.....	709,880

Total pounds..... 1,268,800

Phillip Morgan has taken a lease on the Morgan mine, and started work with a force of ten men. The shaft on the property has a vertical depth of 600 feet, from which level an

incline has been sunk to a depth of 200 feet. Mr. Morgan is drifting from the bottom of the incline on a fine vein of high-grade ore, considerable of which is being hoisted. The property joins the Daly-West on the north, and is considered as fine a piece of undeveloped ground as there is in the camp. Mr. Morgan is one of the heaviest owners in the mine, which bears his name.

Reports from the Valeo are to the effect that the chute of ore encountered in the incline two weeks ago still holds its own, and that sinking upon it still continues. The body has not yet been cut in the lower tunnel, but if it goes down to that depth it soon will be, as the tunnel is being driven with unabated vigor, and for several weeks the management has been looking for it to break into ore with every shot. For the amount of intelligent work done upon it the property is showing up well and everybody is hoping that it will soon develop into a paying proposition, both for the benefit of the owners and the camp.

William Langton, president of the Cumberland Mining company, and L. W. Clark, a prominent mining man came out from Salt Lake last week, and in company with O. E. Lawrence, the superintendent, visited the Cumberland mine. The visit was made for the purpose of straightening up the company's affairs and inspecting the underground workings with the view of sinking the shaft, which is now 450 feet deep, to a depth of 750 feet. The conclusion was reached to advertise for bids, to do the sinking. Mr. Clark was favorably impressed with what he saw in the lower levels of the mine.

Neal Springer showed some fine specimens of copper ore which he had taken from a vein in the Gebhardt ground upon which he is doing some work for the owners, who are Salt Lake parties. The property is situated in Snake Creek district, well up toward the head of Snake Creek canyon. A mineral zone runs through that country that will one day prove of immense value, as small deposits of copper-gold-silver ore are frequently found that show astonishing values—some of them running as high as 60 per cent. in copper, \$20 in gold and 80 ounces in silver. Mining men of wide experience regard Snake Creek as the coming district and they have substantial evidence upon which to base their conclusions.—*Park Record*.

The Pride of Utah Mining Company filed its articles of incorporation with the county clerk, 10th. The capital stock is 150,000 shares, par value \$1, of which 50,000 shares are set aside as working capital.

The incorporators are Samuel F. Walker, 5000 shares; Boyd Park, 5,000 shares; J. Brinker, 1,000 shares; Robert Watson, 30,000 shares; John Watson, 30,000 shares, and W. H. Beecher, 1000 shares. Boyd Park holds 30,000 shares as trustee for working capital, and John R. Middlemass 38,000 shares. The officers are: Boyd Park, president; Joseph Brinker, vice president; Samuel F. Walker, treasurer, and John R. Middlemass, secretary and general manager. The properties of the company are the State, Allen, North Star, Roy and Sims lodes in the Willow Springs Mining district, Tooele county.

Articles of incorporation of the Anita Mining and Milling Company were also filed with the county clerk, August 10th. The incorporators are: H. E. Terbe, W. H. Tibballs, W. J. Browning, George A. Wake of Salt

Lake City, T. C. Hanford of Silver City, W. F. Osman of Grant City, Mo., and T. W. Osman of Mercur. The capital stock is 150,000 shares, par value \$1, and the life of the corporation is placed at 50 years. All of the incorporators have subscribed for 10,000 shares each, except T. C. Hanford, who has 1,000 shares, and holds 29,000 shares in trust. The properties of the company are: the Anchor, Hanford and Constellation claims in the Tiatic mining district, and the officers are: H. E. Terbe, president; W. J. Browning, vice president and treasurer, and W. H. Tibballs, manager and secretary.

The Silver King Mining Company, August 10, paid its regular monthly dividend of \$37,500, making the total paid to date figure up to the handsome sum of \$1,162,500.

The directors of the Mercur Mining Company last week declared the regular monthly dividend of \$25,000, payable on the 20th of the present month. With the payment of this dividend the Mercur Company will have distributed \$775,000 to its shareholders, and will round out a full year that it has not missed a dividend, during which time it has paid \$300,000, or \$1.50 on each share of its capital stock.

This speaks well for the company, and it is expected that with the increase to the capacity of the Mercur mill and the splendid condition of the mine, this record will be improved upon during the next twelve months.

At the Ontario Mine.

There are more men yet working at the Ontario mine than are credited by the current rumors. No. 2 is not closed, there being three shifts of six men each. Several blacksmiths and machinists are employed in the shops. No. 3 is still working 40 men while the drain tunnel has seven. The pumps on the 1500 level at No. 2, together with 500 feet of water pipe, will be taken out soon. It was used to pump water from the sump at the bottom of the shaft. The company has on hand at No. 3 about 400,000 feet of mining timber a sufficient supply, if the mine was in operation, to last all winter. It is given out on reliable authority that William S. Tolles will look after the mine after the close-down. George Groo, the clerk, will have completed 21 years' service for the Ontario company on the 22nd of this month.

The prospect shaft of the Utah Mining & Development company is now down 65 feet, and is finding its way toward the gold vein that was discovered some time ago on the Constellation ground. The U. M. & D. company's ground joins the Constellation on the west. Its shaft is but a few feet west of the Constellation prospect hole, which followed the vein down about 50 feet and was then abandoned, since the Constellation people expect to reach the vein in a drift from the 300-level of their main shaft, it being considered unnecessary to develop the vein at two points. The U. M. & D. company's shaft is a few feet north from where the gold ledge outcrops. At the present depth, 65 feet, ledge matter is coming in and showing some quartz. The shaft will be sunk 15 feet deeper and then a drift will be run south for the vein, provided, of course, that it is not already reached in the shaft. The vein dips slightly to the north.

Chloride Point Mill.

Gill S. Peyton, who has just returned to Salt Lake from a visit to Denver, where he has been for the purpose of investigating into

the merits of the Pelatan Clerici Process of ore reduction, informs *The Salt Lake Herald* that while the process is a success with some ores, he is satisfied with the old cyanide process as it is the intention of the Chloride Point company to employ it in connection with its new mill.

"While the Pelatan Process is more rapid," said Mr. Peyton, "it is a more expensive system, and by its use the cyanide solution employed is decomposed and rendered useless after once being used. Of course the cyanide process is slower, but with plenty of tankage capacity, the cost of treatment is reduced to a minimum after the pulp is once put into the tanks, where it can be leached as long as desired, without adding any more to the cost of the operation."

The Chloride Point mill will have a tankage capacity to start with of 100 tons daily, while the crushing capacity will be 300 tons.

Surveyors will go out to the mine this week for the purpose of laying out the millsite, and excavation work will begin within the next ten days, and it is believed and expected that the plant will be ready for active and effective work within four months from the day that the first ground is broken in preparing for the foundations.

Part of the machinery has already been contracted for and the balance will be ordered from time to time, as required, as it is the intention of the company to build the mill itself, so that it will not be subjected to vexatious delays and unlooked for expenses.

Mr. Peyton believes that the delay in the erection of the plant, has been to the advantage of the company, as now electricity will be used as a motive power at the mill, instead of steam, which fact will save the company considerable, as now the mill will not be equipped with boilers and engine.

The company is about to contract with Mr. Nunn for electrical power, which is to be delivered on the ground by the time the mill is completed.

Carver Notes.

COPPER MOUNTAIN.

Adjoining the Beaver Lake property on the north is Copper mountain, which is a low hill standing separate from the range of mountains to the west. All along the north side of the mountain a great body of copper ore can be traced for several thousand feet, which dips into the hill and in the same direction as the veins of ore which cross the Beaver Lake company's property. Numerous openings have been made by the original owners along the course of the vein, and ore has been taken out of every one of them which would pay well to market. A shaft has been sunk on this property to a depth of 210 feet, which shows good ore all the way down. Ore has been shipped that averaged 20 per cent. copper. The present owners of the property are Messrs. Bentz, Carver and Anderson.

THE MILAN B.

The Milan B. group is an extension of the Copper mountain ground on the west. This property has a surface showing of two distinct veins which parallel the claims. Several openings have been sunk to a depth of about 30 feet from which ore has been shipped. The property is not being worked at the present time, but it is to be incorporated at an early date, and active development work begun.

THE BEAUTY GROUP.

The Beauty group is owned by J. H. Douglas, W. H. Joseph and A. S. Anderson. On

this property a shaft has been sunk to a depth of 40 feet on an incline in a vein of good ore from which assays have been obtained in the yellow metal valued at from \$2 to \$53 per ton. The group consists of four claims, all of which show good surface croppings. A vein of asbestos ranging from two to 14 inches in width has been discovered in sinking the shaft. The present owners of the property being men of limited means, have done nothing towards developing the group for some time, but it is their intention to begin operations again some time in September.

Captain De Lamar had a bond on this property a few years ago for \$20,000, but it was allowed to expire.

THE GALENA.

The Galena mine is working four men in the development of the property. An incline shaft is down to a depth of 74 feet. A vein of silver-lead ore was followed from the surface, but it is not sufficiently large enough to pay. It is the intention of the company to continue the shaft to the 100 foot level and then begin tunneling for the main ore bodies.

THE WASATCH.

The Wasatch group is located in the gulch leading up to the summit of Wasatch mountain on the east side. "Doc" Hall is superintending the development work and is operating with three men.

The shaft is down to a depth of 40 feet. A fissure vein of ore has been encountered from which assays have been obtained showing values of 82 ounces silver, 65 per cent. lead and \$4 in gold. With development the Wasatch will become one of the best mines in the Beaver Lake district.

THE GENNETTE GROUP.

The Gennette group is a new location recently made by Walter G. Getchel, superintendent of the Beaver Lake mine, and several others. The property is located near the True Fissure property, and has very encouraging surface showings.

A shaft has been sunk on a vein which appears to show good values. No assays have yet been taken.

THE TRUE FISSURE

The True Fissure is undergoing active operations and the work is being prosecuted under the direction of Dr. Adams.

DICK BLAND.

The Dick Bland, from which shipments have been made, is lying idle at the present time, owing to its being in litigation.

It is understood that Dr. Adams has secured a lease on the group and it is his intention to start work on the property at an early date.

SKYLARK GROUP.

The Skylark group is an extension to the Wasatch on the west and has very similar surface showings.

A shaft was sunk on this property by the original holders to a depth of 16 feet.

Several shipments have been made, and with further development the mine would no doubt become valuable.—*Correspondence Salt Lake Herald.*

The Mine and Smelter Supply Company of Denver, Colorado, have a contract for a double tramway, 8500 feet long, for the Montezuma Mining Company, nine miles from Kalso Creek, B. C. The E. P. Allis Co. have a contract for a 100-ton concentrator. The cost of the whole will be \$46,000.

GENERAL NEWS.

For the calendar year 1896 the production of copper by the Boston and Montana Company amounted to 60,600,000 pounds.

The Success Gold Mining and Reduction Company has been incorporated with a capital stock of \$1,000,000, divided into 1,000,000 shares, of which amount \$2500 has been subscribed. The principal business will be conducted at Pasadena. The directors are Gardiner H. Smith, C. M. Davis, J. M. Church, J. C. Fraser and Mortimer Ayers.

The following is a kind of a resume of the principal shipments of the Colorado Iron Works company for the week of July 26th. A car load of tramway material was shipped to the Sunny Side mine at Eureka, Colo. The Arkansas Valley Smelting Co. bought a car load of water jackets for smelter, also two large Elliptical Bowl slag trucks.

The Alice property, situated on Yankee Hill, Colo., is reported to have been sold to the Crocker estate of San Francisco for a consideration of \$250,000. This is probably the largest low grade proposition in either Gilpin or Clear Creek counties, and it embraces a very large amount of property, that can undoubtedly be worked successfully with strong people behind it.

July Coinage.

The monthly statement issued by the director of the mint shows that during July the coinage at the United States mints amounted to \$670,850, as follows: Gold, \$337,000; silver, \$260,000; minor coins, \$23,850. No standard silver dollars were coined, as the supply on hand was sufficient for all needs and further that the stock of minor coins has run very low.

The United States mint, at San Francisco, reopened August 2nd, for the first time since June 15th, and Frank A. Leach assumed his new duties as superintendent. Several Klondyke miners appeared with dust and nuggets in buckskin pouches and stout sacks of canvas, which had been stored at Wells, Fargo & Co.'s office in anticipation of the opening of the mint, but the whole amount of Klondyke gold which has accumulated since the mint closed will not exceed \$800,000.

The Anaconda Copper Mining Company has turned into the assessor of Silver Bow county its financial statement, upon which a basis of assessment shall be made for the fiscal year ending May 30. The statement shows that the gross earnings of the year were \$17,275,000; the working and other expenses of the company are given as \$13,000,000. Thus it will be seen that the net earnings of the company were \$4,375,000. This shows an increase of \$1,000,000 over the previous year. If the company fulfills its agreement, or understanding with the new shareholders, the dividends will amount to for the year \$3,000,000, which is 10 per cent. on the capitalization of the company. Last year the sum of \$1,000,000 was carried to the reserve or working fund, and in all probability this will be increased to \$3,000,000 by the operation of last year's output. It is the intention of the company to bring this reserve fund up to \$4,000,000, in order to carry on workings in a profitable manner.

The new machinery recently furnished for the Anchor concentrator at Park City, Utah, is now in place, and the new appliances for handling the ores will be put to a test. At present these include one each of the Ellis and Johnston concentrating tables, and it is expected that they will do good work. The Wilfley, a Colorado table, manufactured by the Mine and Smelter Supply Company of Denver, and which is by all odds the most successful machine for concentrating ores now on the market, has been ordered, and it was due to arrive the fore part of this month. That will give the company three makes of concentrating tables from which to make a selection, and they will all be given a thorough and careful test. The Bradley mill for grinding ores to a fine consistency has already been tried and works to perfection. If experiment proves that these tables will save the values from Anchor ores, enough of them will be put to work the great mine on an extensive scale, provided, of course, that the metal market will warrant it. James T. Kessel is the presiding genius in the concentrating plant, and he expresses the belief that the new machinery will do all that is claimed for it.

The figures for production from the Elkton properties at Cripple Creek, Colo., during the month of June have just been made up. They show that the net profits were more than sufficient to pay the dividend and are as follows: Smelting ore, \$495,572 pounds, gross value, \$29,151.40; net value, \$25,503.24. Dump ore, 4,808 pounds, gross value, \$273.59; net value, \$227.99. Mill ore, 1,112,123 pounds, gross value, \$16,070.56; net value, \$10,242.60. The expenses of the company during the month of May were \$15,368.48. During the week just closed the company shipped two carloads of first class, two cars of second class and ten cars of third class ore.

The Mineral Industry.

We are in receipt of Vol. V. of the *Mineral Industry, Its Statistics, Technology and Trade in the United States and Other Countries* for 1896, Edited by R. P. Rothwell. No labor or expense has been spared in the preparation of this volume. It contains nearly 1000 pages and more than 5000 separate titles.

One will also note from the table of contents that the publishers have enlisted the services of the most eminent authorities on the several subjects treated.

Every effort has been made to render the work an accurate and trustworthy up-to-date cyclopedia of the industries of which it treats, and the universal approval with which it has everywhere been received, especially by experts is evidence that this and the preceding volumes have supplied and urgent want.

This is the only work published in any language that gives the statistics of the mineral industry of the whole world and the five volumes now issued from a complete encyclopedia of the mining and metallurgical industries. Every one interested in knowing the latest and best methods in use for mining, extracting and refining the useful minerals and metals, and the amounts and values of each produced and consumed in every part of the world can find the information in these annual volumes.

To the engineer, the chemist, the metallurgist, the buyer, the seller of minerals and metals and the investor in mineral property, they are indispensable. Each volume is complete in itself. The information contained in one is supplementary but not repeated in the other.

Largest Pump in the World.

The largest pump in the world is at Lake Linden, Mich., and is owned and operated by the Calumet and Hecla Mining Company, says the *Chicago Record*. The Calumet and Hecla pump, named the Michigan, is a truly marvelous piece of mechanism. It can deliver 2,500,000 gallons of water every hour in the 24 without being crowded to its limit of capacity, and it will do the work with scarcely as much noise as is made by the operation of an old-style sewing machine. Outside the doors of the great building which houses it no sound is heard from within, and, standing beside the monster, upon the brink of the pit connected with the lake from which the water is taken, almost the only sound heard is the noise of the suction, as with every stroke more than a thousand gallons are lifted. Briefly it is a triple expansion pumping engine with a capacity of 60,000,000 gallons, standing nearly fifty feet in height and requiring 1,500 horsepower for its operation. It has been proved by actual tests that the nominal capacity can be easily maintained for an indefinite time without injury or strain, and that if pushed to its full capacity the pump would handle approximately 75,000,000 gallons of water in twenty-four consecutive hours. The duty of the pump is to furnish water for the great stamp mills of the Calumet and Hecla company. The pump is housed in a special building near the shore of Lake Torch and below the mills, and it forces a steady stream of water to the upper portions of the mill, where innumerable small jets play upon the great slime tables and jigs. Here the specific gravity of the fine particles of copper contained in the rock separate the mineral from worthless sand, and the size and force of the streams of water are so nicely regulated as to away the sand and yet carry with it the minimum of copper.

With the mills now in course of construction or arranged for, and those being enlarged, the total milling capacity of Cripple Creek will in a short time be 1250 tons per day. These will work low-grade ores which are now not handled, and it is claimed that with the continued shipments of high-grade ores to the smelters the output of the district will be doubled or brought up to about \$20,000,000 a year, provided the mines will supply the ore. At present the mills cannot handle the ore now offered, and with increased and cheaper milling facilities no doubt many new producers would be developed.

PERSONAL NEWS ITEMS

H. S. Meyer, of Panamint, has gone to San Francisco on important mining business.

P. L. Fearn, of New York, a mining man, has gone to El Plomo, Sonora, Mexico.

W. H. Ferguson, of Prescott, Arizona, has recently returned from a trip to San Francisco.

N. Bell, an old time Silver City, N. M., miner, was one of the pleasant callers at the *JOURNAL* office the other day.

L. C. Moreland, superintendent of the Bay Horse mine, near Mesquite, San Diego county, left here a few days ago, with the intention of putting a large force of men at work on the property.

Col. Doyle, who has been the manager of the Butte mine, at Randsburg, has gone to the Alaska gold fields.

Robert Strauss, superintendent of the famous Fortuna mine, near Yuma, Ariz., was a visitor to Prescott last week.

Fifty-seven tons of ore, recently taken from the Kinyon mine at Randsburg, cleaned up \$10,000.

C. D. Bell, of Denning, N. M., has left for the gold fields of Alaska.

Wm. Langdon, who has been prospecting in the Panamint country, has gone to San Francisco, where he will embark for Klondike.

John Lawler, of Prescott, Ariz., has gone to Klondike, where he expects to "strike it rich."

J. C. Underwood, an experienced mining man, was a caller at the JOURNAL office the other day. Mr. Underwood is purchasing machinery for the People's Valley Mining Company of Arizona.

L. R. Hope, a competent hydraulic engineer of Denver, Colo., has accepted a position at Graham, N. M.

J. M. Dover, of the Greenhorns, was in Bakersfield last week with some samples from his mine.

Gwynne Dennis, the secretary of Lombard, Goode & Co., of Chicago, New York and London, arrived in Phoenix, Ariz., August 3d. The company which Mr. Dennis represents is interested in the copper mines at the Grand Canyon.

John T. Graham, one of the principal owners of the Confidence mine at Mogollon, N. M., arrived at the mine from Denver, Colo., last week.

Thomas Couch, one of Coulterville's prominent mining men, is at present in Salt Lake City, Utah.

Geo. Gecker, of White Hills, Mohave County, Ariz., has left for the east.

J. M. Waughman, the well known mining owner was in Bakersfield, from the Greenhorn mountains August 4th.

Wm. De Beque, who fell into a shaft at the Onaida mine, at Lorena Plat, near Kingman, Ariz., and broke his leg, has gone to San Francisco, Cal., where he will recuperate for a while.

J. E. Stephens, one of the principal owners of the Wicks mine, was in Silver City, N. M., last week, from Chicago, Ill.

A new style river dredger is being constructed at Smartsville, Calif., under the superintendence of R. H. Postlethwaite.

Chas. Davis, an old time mining man of Grant County, N. M., has recently returned to Silver City, N. M., from Weaver, Ariz., about 40 miles from Prescott.

Prof. La Due, of the Samon mine at Chloride, Ariz., has been visiting in this section of the country lately.

P. J. Cirkel has left San Francisco, Cal., for Salmon, Idaho, where he will assume his position as superintendent of the Yellow Jacket mine and reopen the property.

A. W. Davis, of Los Angeles, went down to his mines at Alamo, Lower California, Mexico, a few days ago.

M. C. Ihlseng, the mining expert who has been examining the Trea Amigos mine at Oro Blanco, Ariz., has returned to his home in Pennsylvania.

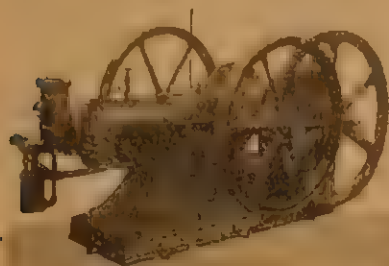
Judge Dunbar, the mining attorney of Colorado has located in Kingman, Arizona.

Z. T. Cole, a mining man of Los Angeles, went down to Ensenada, Lower California, Mexico, last week, to look at some mining properties.

P. W. Bradley, superintendent of the Bonker Hill and Sullivan mines of Idaho, has been examining some properties in Placer county, California.

R. G. Weber, secretary of the Weber Gas and Gasoline Engine Company, of Kansas City, Mo., spent a few days in the city of Chihuahua last week and paid a visit to the Santa Eulalia mines.

Hon. L. O. Cowan returned to Kingman, Arizona from Mexico, where he and Joe Pömler are working some rich ledges on which they have a concession.



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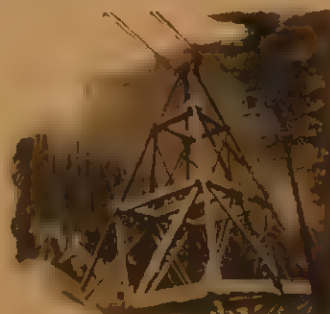
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CATALOGUES ON APPLICATION

Wm. H. McKean, who has been here investigating the merits of the Woods Automatic Dry Concentrator, has gone back to Randsburg, where he will erect one on the Alameda mine.

Steve Thorne, son of D. C. Thorne, of Prescott, Ariz., returned home from San Francisco, August 6th. Austin Cole, of Hartford, Conn., was one of a party of mining men who went to Alamo, Lower California, Mexico, the other day.

J. B. Poingdestre is in San Francisco buying some mining machinery for the Good Tytle mine, at Dobbins Ranch, Yuba county, California, of which he is the manager.

J. B. Hutchinson, the Guerrero mining man, is contemplating a trip to the Alaska gold fields.

J. P. Gibson, formerly of White Hills, Mohave county, Arizona, is working in the mines at Parris, Calif.

John Appel is preparing to start the Monaghan Murphy mill on Capitol group of mines on the Colorado River, above Cottonwood Island.

J. S. Wilde, secretary of the Randsburg Gold Mining, Milling and Water Company, left Randsburg for this city last week, to take charge of the Los Angeles office of the above firm.

Joseph Johndrow, of Prescott, Ariz., has left for San Francisco, California, from there he will go to Klondyke.

Messes M. Bailoud, E. Brerault and Felix Goun, engineers from Paris, are spending a few days in Bisbee, Ariz. These gentlemen have but just returned from Lower California, where they have been taking in the extensive copper properties near Rosario.

Harry Johnson made a visit to Randsburg from Granite Wells last week. He reports everything at the Wells in fine shape.

D. B. Gillette and Lester Jackson left Prescott, Ariz., for the City of Mexico, August 5th, on important mining business.

Chas. G. Yale, statistician of the United States Mint at San Francisco, left for Klondyke, July 28th.

Ex-Governor H. H. Mackham, who has been in Lower California, returned to Los Angeles last week.

Capt. C. W. Anderson, of Randsburg, California, has left for Klondyke.

Wm. Kieff, the mining man of Cook's Peak, N. M., was in Silver City the other day, and reports his properties looking fine.

Col. H. L. Pickett, of Salt Lake, Utah, was in Santa Fe, N. M., last week.

R. F. Allen, of Covina, Calif., has been appointed special agent to look after the forest reservations of California and Arizona.

Benj. J. H. Jones, the proprietor of the Pioneer Reduction Works, of Nevada, California, in charge of the chlorination works of the Treadwell mine, at Douglas Island, Alaska.

H. T. Collins, the Sydney Australia mining man, has been in the City of Mexico since the latter part of July. He has returned to take charge of the Chiapas Mining Company's property in Mexico.

Thos. Durant, an old Tucson citizen, is prospecting near Mojave, California. He says he has several promising locations, and has one bonded to California parties.

Rubiano Ubarra, a mining man of Lower California, was in San Diego, Calif., last week.

Larry Heater has returned to his home in West Virginia from Klondyke.

Isadore Sternfeld, the electrician of the City of Mexico, has recently returned from a trip to Pueblo.

Robert Laurie, of Tucson, Arizona, has been visiting his cousin in San Francisco, Cal., who has just returned from Klondyke.

John Kinyon, of Randsburg, Calif., has gone on a visit to his home at Colton, Calif., and will take in the various sea benches.

E. T. Loy and W. W. Taylor, of this city, has been at Kingman, Ariz., for some time past.

S. V. Backley and G. C. Brown, of Tucson, Ariz., has gone to the Tucson mountains, where Mr. Brown has some promising copper properties.

L. P. Cowen, who for the past twenty years has represented the Hefflin mining interests in Grant county, N. M., has gone to Galveston, Texas, where he will reside.

Engineer L. Kiviatowski, who has been making an examination of some properties in Lower California, returned to Los Angeles the other day.

OBITUARY

Wm. Lacy, sr., prominently connected with mining in the United States and Mexico, and one of the firm of the Lacy Manufacturing Company of Los Angeles, died recently while visiting his mining properties in Lower California, Mexico, recently purchased by himself and sons. Full details have not yet been received.

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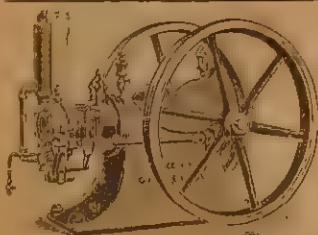
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LOS ANGELES MINING AND STOCK EXCHANGE REPORT

Average Bids and Offers, and Total Sales for the two weeks ending August 14th, 1897.

STOCKS	AVERAGE		TOTAL SALES
	BID	ASK	
CARIBOO, (British Columbia) Capital, \$100,000 Par \$1			
WEDGE, (Randsburg) Capital, \$500,000 Par, \$1	45 1/2	50	7,900
LAGUNA, (San Diego) Capital, \$500,000 Par, \$1			
RAND MOUNTAIN, (Randsburg) Capital, \$1,000,000 Par, \$1	.03 1/2	.04	165,000
PACIFIC CONSOLIDATED, (Red Rock) Capital, \$1,000,000 Par, \$1	.01 1/2	.02	180,000
BROWN-DAKE, (Arizona) Capital, \$1,500,000 Par, \$1	.03 1/2	.04	200
EAST AMARGOSA,02	.02 1/2	5,000
UNLISTED ACTIVE			
VOLCANIC, (Arizona) Capital, \$750,000 Par, \$1			
IRON MOUNTAIN, (Cripple Creek) Capital, \$700,000 Par, \$1	.01 1/2	.02	12,000
PORTLAND, (Cripple Creek) Capital, \$3,000,000 Par, \$1	.68 1/2	.70	200
LITTLE BUTTE, (Randsburg) Capital, \$500,000 Par, \$1	.28	.30	2,300
ANACONDA, (Cripple Creek) Capital, \$5,000,000 Par, \$1			
ARGENTUM JUNIATA, (Aspen) Capital, \$2,600,000 Par, \$1			
MOLLIE GIBSON, (Aspen) Capital, \$5,000,000 Par, \$1			
AMARGOSA,25	.27	100
ISABELLA, (Cripple Creek) Capital, \$2,500,000 Par, \$1			
VAL VERDE, (Randsburg) Capital, \$2,000,000 Par, \$1	.02 1/2	.02 1/2	3,600
MAGGANETTA, (Randsburg) Capital, \$500,000 Par, \$1	.03 1/2	.04	8,000
LEON, (Riverside) Capital, \$500,000 Par, \$1			

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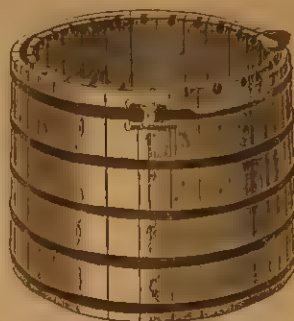
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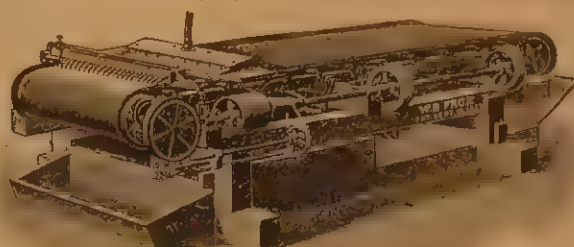
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NAMES OF MINES	LOCATION	No. of Shares	Capital Stock	Par Value	Amount of last Dividend	Date of Last Dividend	Total Amount Paid in Dividends	Kind of Mineral Produced
Adair Cons.	California	100,000	\$ 500,000	\$ 5	\$ 10	June 1897	\$ 100,000	Q
Adams	Colorado	1,500,000	1,500,000	5	01	October 1895	89,500	S, L, C
Alaska Treadwell	Alaska	200,000	5,000,000	25	10	January, 1897	3,100,000	G
Alaska Mexican	Alaska	200,000	1,000,000	5	27 1/2	January, 1897	191,000	G
Anaconda	Montana	100,000	30,000,000	25	1 25	Nov. 1896	2,250,000	C
Anchorage Leland	Colorado	600,000	600,000	1	01	May 1897	60,000	G
Atlantic	Michigan	10,000	1,000,000	25	1 00	Feb. 1897	710,000	C
Bald Butte	Montana	250,000	250,000	1	03	June 1896	470,000	S, G
Bangkok C. Bell	Colorado	600,000	600,000	1	01	July 1896	107,000	S, L, C
Big Six	Colorado	500,000	500,000	1	00 1/2	April 1897	5,000	G, S
Boston & Montana	Montana	150,000	3,750,000	25	3 00	Feb. 1897	5 17,000	G, C, S
Bulion Beck and Champ	Utah	100,000	1,000,000	10	50	Mar. 1897	2 185,000	G, S
Cariboo	British Col.	800,000	800,000	1	02	Dec. 1896	125,000	G
C. O. D.	Colorado	500,000	500,000	1	01	March 1896	25,000	G
Calumet & Hecla	Michigan	100,000	2,500,000	25	15 00	Feb. 1897	48 250,000	C
Centennial Eureka	Utah	30,000	1,800,000	50	1 00	Mar. 1897	2 000,000	S, L
Champion	California	3,400	31,000	10	25	April 1897	278,200	G
Consolidated, California and Virginian	Nevada	216,000	21,000,000	100	25	March 1895	3 002,800	S, G
Contra	Nevada	100,000	10,000,000	10 01	01	Feb. 1895	77,000	G
Copper Queen Consolidated	Arizona	200,000	2,000,000	10	25	June 1895	190,000	C
Crescent	Utah	21,000	600,000	2 1/2	00	July 1897	280,000	G
Daly	Utah	150,000	3,000,000	20	25	Mar. 1897	2 625,000	S, L
Deadwood Terra	Dakota	200,000	5,000,000	25	50	August 1896	1 240,000	G
De Lamar	Idaho	400,000	2,000,000	5	25	October 1896	2 20 130	S, L
Dalton and Lark	Utah	2,500,000	2,500,000	1	00 1/2	August 1896	87,500	S, L
Elkhorn	Montana	200,000	1,000,000	5	06	June 1895	1,212,000	S
Elkton Consolidated	Colorado	1,250,000	1,250,000	1	02	May 1897	260,000	G, S
Florence	Montana	500,000	2,500,000	5	01	Jan. 1897	118,000	G
Franklin	Michigan	40,000	1,000,000	25	2 00	January 1894	1 200,000	C
Galena	Utah	100,000	1,000,000	10	05	Jan. 1897	71,000	G, S, L
Garfield Grouse	Colorado	1,200,000	1,200,000	1	01	Dec. 1896	21,000	G
Geyser-Marion	Utah	60,000	300,000	5	05	June 1897	27,000	G
Golden Eagle	Colorado	1,000,000	1,000,000	1	01	Sep. 1896	10,000	G
Golden Fleece	Colorado	600,000	600,000	1	01	Feb. 1897	580,170	G, S
Gold Con.	Colorado	200,000	1,250,000	5	10	May 1897	110,000	G, S
Gold and Globe	Colorado	750,000	750,000	1	3 10	August 1896	38,000	G
Granite Mountain	Montana	400,000	10,000,000	25	20	July 1896	12 120,000	S
Hecla Consolidated	Montana	30,000	1,500,000	50	50	January 1897	2 160,000	S, G, L, C
Helena & Frisco	Idaho	500,000	2,500,000	5	01	August 1896	475,000	S, L
Honestake	Dakota	125,000	12,500,000	100	25	Jan. 1897	6 118,740	G
Hope	Montana	100,000	1,000,000	10	10	February 1897	662,252	S
Horn Silver	Utah	400,000	10,000,000	25	12 1/2	January 1896	5 080,000	S, L
Iowa	Colorado	1,000,000	310,000	1	00 1/2	Feb. 1897	65,000	G
Iron Mountain	Montana	500,000	5,000,000	10	06	Nov. 1896	492,500	S
Isabella	Colorado	2,250,000	5,000,000	100	02 1/2	Mar. 1897	258,750	G
Keamsarge	Michigan	10,000	1,000,000	25	00	Dec. 1895	120,000	C
Kennedy	California	100,000	10,000,000	1	48	August 1895	1,796,000	G
Mar of Erin	Colorado	600,000	3,000,000	5	02	November 1895	740,000	S, L, G, C
Mayflower	California	60,000	1,200,000	20	10	December 1895	242,000	G
Minnesota	Minnesota	165,000	16,500,000	100	1 50	July 1896	3 240,000	I
Mollie Gibson	Colorado	1,000,000	5,000,000	5	05	January 1895	1 080,000	S
Montana Id.	Montana	680,000	3,300,000	5	06 1/2	October 1895	2 800,647	G, S
Moose	Colorado	600,000	600,000	1	01	January 1896	180,000	G
Morning Star	California	2,400	210,000	100	7 50	May 1897	510,000	G
Moulton	Montana	400,000	2,000,000	5	05	February 1894	460,000	S, G
Mt. Rosa	Colorado	1,000,000	1,000,000	1	00 1/2	Oct. 1896	30,000	G
Mercur	Utah	200,000	5,000,000	25	12 1/2	June 1897	725,000	G
Mammoth	Utah	400,000	10,000,000	25	05	Nov. 1896	1,140,000	G, S, C
Moon Anchor Gold	Colorado	600,000	600,000	1	01	July 1896	21,000	G
New Elkhorn	Colorado	300,000	1,500,000	5	24	Sep. 1896	59,000	G
New York & Hon. Rosario	Central A.	150,000	1,500,000	10	20	Jan. 1897	600,000	S, G
Napa	California	100,000	700,000	7	10	April 1897	830,000	Q
New Idria Quicksilver	California	100,000	1,000,000	10	10	June 1897	10,000	G
North Star	California	100,000	1,000,000	10	60	June 1895	450,000	G
Nugget	Colorado	1,000,000	1,000,000	1	00 1/2	Jan. 1895	10,000	G
Ontario	Utah	150,000	15,000,000	100	10	June 1897	13,150,000	S, L
Oreola	Michigan	50,000	1,250,000	25	1 00	February 1897	2 122,000	C
Pacific Coast Borax	California	20,000	2,000,000	100	1 00	July 1896	422,000	B
Parrot	Montana	230,000	2,300,000	10	10	June 1894	1,622,000	C
Pennsylvania Consolidated	California	51,500	5,150,000	100	05	May 1897	12,025	G
Plumas Eureka	California	140,800	1,408,000	10	18	October 1893	2,606,291	G
Portland	Colorado	3,000,000	3,000,000	1	01	May 1897	1,013,000	G, S
Quicksilver Pref.	Michigan	43,000	4,300,000	100	25	June 1891	1 823,911	Q
Quincy	Idaho	50,000	1,250,000	25	8 00	February 1897	9 070,000	C
Red Cloud	Colorado	200,000	1,000,000	5	10	December 1892	153,000	S, L
Sacramento	Utah	1,000,000	1,000,000	1	00 1/2	March 1897	22,000	G
Sierra Buttes	California	222,500	2,225,000	10	12	October 1895	1,559,533	G
Silver, Mg	New Mexico	500,000	500,000	1	4 05	December 1891	300,000	S
Small Hoopes Consolidated	Colorado	250,000	5,000,000	20	10	March 1896	3 275,000	S
South Swansea	Utah	30,000	150,000	5	05	June 1897	15,000	S, L
Standard	California	100,000	10,000,000	100	10	March 1897	3,773,888	G, S
St. Joseph	Missouri	250,000	2,500,000	10	25	Dec. 1895	2,524,000	L
Silver King	Utah	150,000	3,000,000	20	25	June 1897	1,078,500	S, L, C
Smuggler Union	Colorado	50,000	5,000,000	100	1 00	October 1896	150,000	G, S
Swansea	Utah	20,000	100,000	5	05	June 1897	46,000	S, L
Tom Boy	Colorado	200,000	200,000	10	20	March 1896	410,000	G
Tamarack	Michigan	50,000	1,250,000	25	3 00	Dec. 1896	1,770,000	C
Trinity River	Colorado	500,000	500,000	1	01	April 1894	37,400	G
Union	Colorado	1,250,000	1,250,000	1	01	June 1896	73,000	B
United Verde	Arizona	300,000	5,000,000	10	25	December 1893	562,500	C
Utah	Utah	100,000	1,000,000	10	02	Feb. 1897	175,000	G, S
Utah Consolidated	Utah	30,000	150,000	5	02	Sep. 1896	3,000	S, L
Victor	Colorado	200,000	1,000,000	5	10	Mar. 1897	765,000	G
War Eagle	British Col.	500,000	500,000	1	06	October 1896	187,000	G

S, Silver.

G, Gold.

L, Lead.

C, Copper.

Q, Quicksilver.

I, Iron.

B, Borax.



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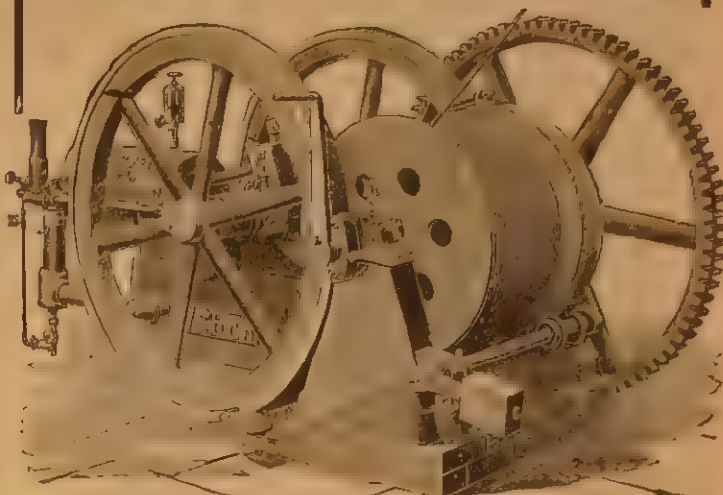
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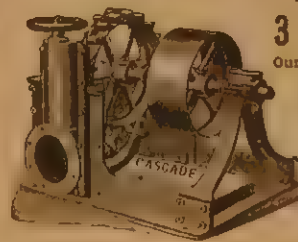
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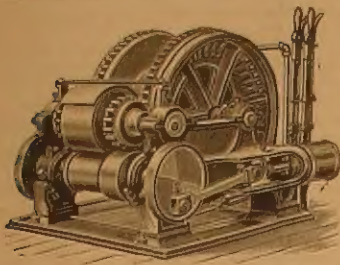


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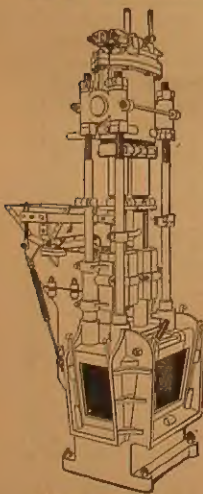
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and Brass Screens for all uses. Inventor and Manufac-
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California, Nevada, Alaska, Mexico, Central America, Australia and British Possessions.

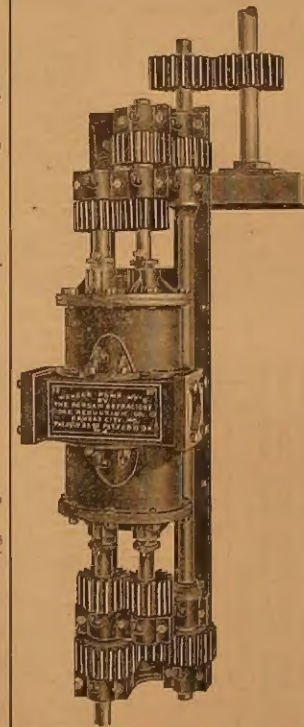
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(Established 1860)

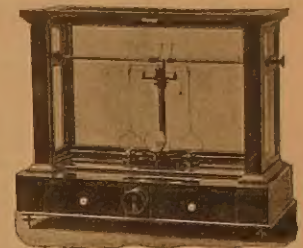
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Especially Adapted to MINING PROSPECTION



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This is a short beam balance and especially
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With opinions of the Attorney-General and J. F.
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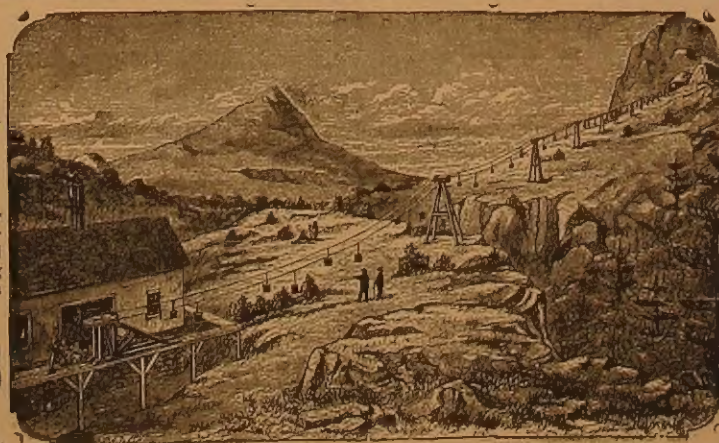
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material, has been erected by us all over
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Ropeways,
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Hoisting Apparatus, Patent Grip Pul-
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From Points in Mexico, New Mexico, Texas and Arizona, to El Paso, Pueblo, Denver and Kansas City.

ATCHISON, TOPEKA & SANTA FE R. R.

FROM	TO	Car Loads, in dollars and cents per ton of 2,000 lbs.			
		Ore Concentrates		Lead Bullion, valuation not to exceed \$50 per ton.	
		Valuation not to exceed \$50 per ton.	Valuation not to exceed \$100 per ton.	Valuation not to exceed \$50 per ton.	Valuation not to exceed \$100 per ton.
SONORA RAILWAY					
Guaymas, Mex.	El Paso	10.00	11.50	13.50	15.00
	Pueblo	12.50	14.00	17.00	18.50
	Denver	13.50	15.00	17.00	18.50
	Kansas City	15.00	17.00	19.00	21.00
Ortiz, " "	El Paso	8.50	11.00	13.00	15.00
	Pueblo	12.00	13.50	15.50	17.00
	Denver	13.00	14.50	16.50	18.00
	Kansas City	14.50	16.00	18.00	19.50
Torres, " "	El Paso	9.00	10.50	12.50	14.00
	Pueblo	11.50	13.00	15.00	16.50
	Denver	12.50	14.00	16.00	17.50
	Kansas City	13.50	15.00	17.00	18.50
Hermosillo, " "	El Paso	8.50	10.00	12.00	13.50
	Pueblo	10.00	11.50	13.50	15.00
	Denver	11.00	12.50	14.50	16.00
	Kansas City	12.00	13.50	15.50	17.00
Pesqueira, " "	El Paso	8.00	9.50	11.50	13.00
	Pueblo	10.50	12.00	14.00	15.50
	Denver	11.50	13.00	15.00	16.50
	Kansas City	12.50	14.00	16.00	17.50
Querobabi, " "	El Paso	7.50	9.00	11.00	12.50
Santa Ana, " "	Pueblo	10.00	11.50	13.50	15.00
	Denver	11.00	12.50	14.50	16.00
	Kansas City	11.50	13.00	15.00	16.50
Magdalena, " "	El Paso	7.00	8.50	10.50	12.00
	Pueblo	9.50	11.00	13.00	14.50
	Denver	10.50	12.00	14.00	15.50
	Kansas City	11.50	13.00	15.00	16.50
Imuris, " "	El Paso	7.00	8.50	10.50	12.00
	Pueblo	9.50	11.00	13.00	14.50
	Denver	10.50	12.00	14.00	15.50
	Kansas City	11.50	13.00	15.00	16.50
A. T. & S. F. R. R.					
Nogales, A. T.	El Paso	8.00	9.50	11.50	13.00
	Pueblo	10.50	12.00	14.00	15.50
	Denver	11.50	13.00	15.00	16.50
	Kansas City	12.50	14.00	16.00	17.50
Catalbanas, " "	El Paso	8.00	9.50	11.50	13.00
	Pueblo	10.50	12.00	14.00	15.50
	Denver	11.50	13.00	15.00	16.50
	Kansas City	12.50	14.00	16.00	17.50
Sanford, " "	El Paso	5.50	7.00	9.00	10.50
	Pueblo	8.00	9.50	11.50	13.00
	Denver	9.00	10.50	12.50	14.00
	Kansas City	10.00	11.50	13.50	15.00
Crittenden, " "	El Paso	5.50	7.00	9.00	10.50
	Pueblo	8.00	9.50	11.50	13.00
	Denver	9.00	10.50	12.50	14.00
	Kansas City	10.00	11.50	13.50	15.00
Fairbank, " "	El Paso	4.50	6.00	8.00	9.50
	Pueblo	7.00	8.50	10.50	12.00
	Denver	8.00	9.50	11.50	13.00
	Kansas City	9.00	10.50	12.50	14.00
Tucson, " "	El Paso	4.50	6.00	8.00	9.50
	Pueblo	7.00	8.50	10.50	12.00
	Denver	8.00	9.50	11.50	13.00
	Kansas City	9.00	10.50	12.50	14.00
Benson, " "	El Paso	4.50	6.00	8.00	9.50
	Pueblo	7.00	8.50	10.50	12.00
	Denver	8.00	9.50	11.50	13.00
	Kansas City	9.00	10.50	12.50	14.00
Steins Pass, N.M.	El Paso	8.00	9.50	11.50	13.00
	Pueblo	10.50	12.00	14.00	15.50
	Denver	11.50	13.00	15.00	16.50
	Kansas City	12.50	14.00	16.00	17.50
Lordsburg, " "	El Paso	7.50	9.00	11.00	12.50
	Pueblo	10.00	11.50	13.50	15.00
	Denver	11.00	12.50	14.50	16.00
	Kansas City	12.00	13.50	15.50	17.00
Silver City, " "	El Paso	2.50	3.50	4.50	5.50
	Pueblo	5.00	6.00	7.00	8.00
	Denver	6.00	7.00	8.00	9.00
	Kansas City	7.00	8.00	9.00	10.00
Hudson, " "	El Paso	2.50	3.50	4.50	5.50
	Pueblo	5.00	6.00	7.00	8.00
	Denver	6.00	7.00	8.00	9.00
	Kansas City	7.00	8.00	9.00	10.00
Deming, " "	El Paso	2.50	3.50	4.50	5.50
	Pueblo	5.00	6.00	7.00	8.00
	Denver	6.00	7.00	8.00	9.00
	Kansas City	7.00	8.00	9.00	10.00
Florida and Lake Valley, " "	El Paso	2.50	3.50	4.50	5.50
	Pueblo	5.00	6.00	7.00	8.00
	Denver	6.00	7.00	8.00	9.00
	Kansas City	7.00	8.00	9.00	10.00
Nutt, " "	El Paso	2.50	3.50	4.50	5.50
	Pueblo	5.00	6.00	7.00	8.00
	Denver	6.00	7.00	8.00	9.00
	Kansas City	7.00	8.00	9.00	10.00
El Paso, " "	El Paso	8.00	9.50	11.50	13.00
	Pueblo	10.50	12.00	14.00	15.50
	Denver	11.50	13.00	15.00	16.50
	Kansas City	12.50	14.00	16.00	17.50
Las Cruces, " "	El Paso	1.50	2.50	3.50	4.50
	Pueblo	4.00	5.00	6.00	7.00
	Denver	5.00	6.00	7.00	8.00
	Kansas City	6.00	7.00	8.00	9.00
Rincon, " "	El Paso	2.00	3.00	4.00	5.00
	Pueblo	4.50	5.50	6.50	7.50
	Denver	5.50	6.50	7.50	8.50
	Kansas City	6.50	7.50	8.50	9.50

FROM TO

A. T. & S. F. R. R.

ATLANTIC & PACIFIC RAILROAD

Rates on Copper or Zinc Ore to Canon City.

Taking Effect July 1st, 1891.—So far as rates on Copper or Zinc Ores are concerned, Canon City, Col., will be considered as common with Pueblo; in other words the rates shown in Tariff as applying on shipments of Ore to Pueblo, will also apply on shipments of Copper or Zinc Ore to Canon City.

In the absence of positive information as to the value of Ore, Ore Concentrations, or Base Metal, Agents will bill at rates sufficiently high to protect the Company. These rates can be corrected when evidence of actual value is produced.

The market price at destination, to be verified by assays made

Car Loads in dollars and cents per ton of 2,000 lbs.

Ore Concentrates

Valuation not to exceed \$50 per ton.

Valuation not to exceed \$100 per ton.

Valuation not to exceed \$50 per ton.

Valuation not to exceed \$100 per ton.

Lead Bullion, valuation not to exceed \$50 per ton.

Base Metal, Copper Matte, Bar and Black Copper, valuation not to exceed \$500 per ton.

by the Railroad Company, at owner's expense, will govern the value and determine the rate.

Agents must cause shippers to understand the condition upon which these rates are based, and should make their receipts read: "Rates subject to correction according to value at destination."

These rates only apply on lots of ten tons or over. On lots of four tons and under ten, 20 per cent, and on lots of one ton and less than four, 40 per cent will be added to above rates. Base Metal, Copper Matte and Ore Concentration on lots of less than one ton, will take first-class rates from a the above points, except when the rate based on valuation makes it higher, that rates on small lots of high value may not be less than the rates when in lots of one ton or over as above.

Charges on Ore in car-loads must be guaranteed, and on lots less than a car-load must in all cases be prepaid.

Omaha Rates.—The Rates to Omaha, Neb., all grades, will be \$1 per ton higher than the rates to Kansas City.

Notes.—All shipments of Ore and Concentrations valued not to exceed \$50 per ton must be billed at the rate for Ore and Concentrations, "Valuation over \$50 not to exceed \$100 per ton," and shipping receipt must be issued by agent at said rate. Agent at destination is authorized to correct the rate for Ore and Concentrations, "Valuation not to exceed \$50 per ton," upon presentation of properly certified smelter returns, showing that the value does not exceed \$50 per ton.

Intermediate points not named will take rates provided for next station beyond.

SOUTHERN CALIFORNIA RAILWAY.

Rate on Ore in car loads, valuation not to exceed \$50 per ton, minimum weight 24,000 lbs. Oro Grande, Cal., to Pueblo, Col., \$10.30 per ton.

Same, Victor, Cal., to Pueblo, \$10.35 per ton.

Ore, car loads, when coming from the Republic of Mexico valuation not to exceed \$50 per ton; San Diego or National City to Denver, Col., and Pueblo, Col., \$12 per ton of 2,000 lbs.

Ore, valuation not to exceed \$50 per net ton and so received for, minimum weight 30,000 lbs. 75c per 100 lbs. to Denver and Pueblo, Col., from all points on the Southern California Railway.

ORE TARIFF.

From Points in New Mexico, Arizona and California, to El Paso, San Francisco and Vallejo Junction.

SOUTHERN PACIFIC R. R. COMPANY.

FROM	TO	Valuation not to exceed \$15 per ton.	Valuation not to exceed \$50 per ton.	Valuation not to exceed \$100 per ton.	Valuation not to exceed \$500 per ton.	Lead Bullion, Copper Matte, Bar and Black Copper, valuation not to exceed \$500 per ton.
El Paso, Tex.	San Francisco	*9.10	*9.10	*11.20	11.20	11.20
Deming, N.M.	San Francisco	*9.10	*9.10	*11.20	11.20	11.20
Gage, " "	San Francisco	*9.10	*9.10	*11.20	11.20	11.20
Separ, " "	San Francisco	*9.10	*9.10	*11.20	11.20	11.20
Lordsburg, " "	San Francisco	*9.10	*9.10	*11.20	11.20	11.20
Steins Pass, " "	San Francisco	*9.10	*9.10	*11.20	11.20	11.20
Bowie, A. T.	San Francisco	*9.10	*9.10	*11.20	11.20	11.20
Willcox, " "	San Francisco	*9.10	*9.10	*11.20	11.20	11.20
Dragoon Summit, " "	San Francisco	*9.10	*9.10	*11.20	11.20	11.20
Benson, " "	San Francisco	*9.10	*9.10	*11.20	11.20	11.20
Tucson, " "	San Francisco	*9.10	*9.10	*11.20	11.20	11.20
Casa Grande, " "	San Francisco	*9.10	*9.10	*11.20	11.20	11.20
Maricopa, " "	San Francisco	*9.10	*9.10	*11.20	11.20	11.20
Gila Bend, " "	San Francisco	*9.10	*9.10	*11.20	11.20	11.20
Aztec, " "	San Francisco	*9.10	*9.10	*11.20	11.20	11.20
Gila City, " "	San Francisco	*9.10	*9.10	*11.20	11.20	11.20
Yuma, " "	San Francisco	*9.10	*9.10	*11.20	11.20	11.20
Newhall, Cal.	San Francisco	*9.10	*9.10	*11.20	11.20	11.20
Mojave, " "	San Francisco	*9.10	*9.10	*11.20	11.20	11.20
Callente, " "	San Francisco	*9.10	*9.10	*11.20	11.20	11.20
Milton, " "	San Francisco	*9.10	*9.10	*11.20	11.20	11.20
Hollister, " "	San Francisco	*9.10	*9.10	*11.20	11.20	11.20

Rates marked thus () apply on Carloads ONLY, other rates apply only on lots of twelve tons or over. On lots of four tons and under twelve, 20 per cent; and on lots of one ton and less than four 40 per cent will be added to the above rates.

Vallejo Junction takes same rate as San Francisco.

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Automatic Dumping Device

*
For Conveying
Ore,
Cordwood,
Etc.



EMPIRE, NEVADA, April 17th, 1898

Vulcan Iron Works:—GENTLEMEN: The ropeway furnished by your Company to convey tailings from Morgan Mill to Mexican Mill, a distance of seven-eighths of a mile, is giving entire satisfaction. We transport 200 tons of tailings in ten hours; one man does the whole business, including elevating tailings from hopper in the ground, operating Vulcan self-loader, and attending to the ropeway generally. The self-dumper requires no attention whatever. The Vulcan loader I consider the best feature in the whole Ropeway, making it possible for one man to load 200 tons in ten hours.

Yours very truly,

J. F. WOODBURY, Supt.

VULCAN IRON WORKS,

Manufacturers of Mining Machinery,
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Rolls, guaranteed best Babbit Made
COPPER FOR AMALGAMATING PLATES.
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above, 75c; any one of above, 50c; copper assay-
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Write for full price list and mailing envelopes

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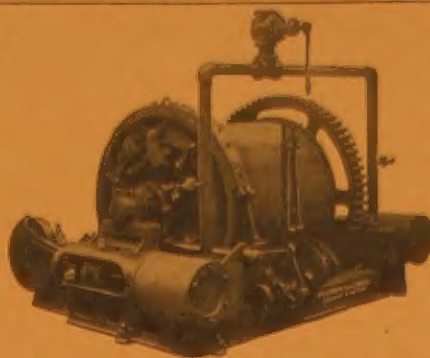
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MEDIUM SIZED

STEAM HOISTING ENGINES



These are designed with great care by engineers familiar with the best previous practice, and knowing just what is wanted to render satisfactory service on a mine. Do you want such service? Then buy one of these improved machines.

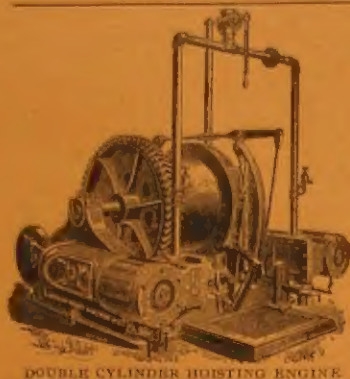


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STAMP MILLS, SMELTING FURNACES,
CYANIDE PLANTS, ORE CRUSHERS,
FRUE VANNER CONCENTRATORS,
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DENVER, COLO. 36 BROADWAY, N.Y.
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DOUBLE CYLINDER HOISTING ENGINE

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Manufacturers of and Dealers in

All the Latest Improved

Quartz Milling, Pumping, Smelting and Electrical
Machinery, Boilers & Engines OF ALL POWERS,
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BUILDERS of "HENDY" IMPROVED "TRIPLE-DISCHARGE" TWO-STAMP MILLS

PLANS, SPECIFICATIONS and ESTIMATES OF COST FURNISHED and CONTRACTS MADE
FOR FURNISHING and ERECTING MINING and MILLING PLANTS for all conditions of Use.

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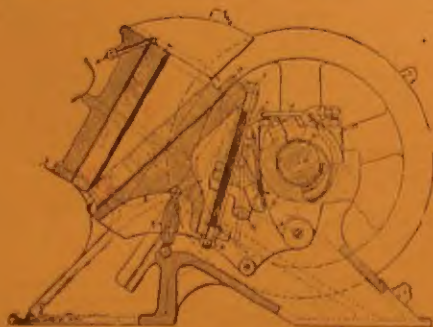
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A SPECIALTY

THE MORRIS ROCK BREAKER & ORE CRUSHER



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IT MAKES A FINER AND MORE EVEN PRODUCT
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PECULIARLY ADAPTED FOR DISTRICTS WHERE FUEL
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IT REQUIRES LESS POWER THAN ANY OTHER
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SOLE AGENTS FOR THE MANUFACTURE AND SALE OF

THE HOPP STRAIGHT LINE FURNACE, For Smelting, Charring, and Desulfurizing ores.

WE CARRY IN STOCK

Horizontal, Vertical and Portable Engines and Boilers. Rock Breakers, Cornish Rolls, Pulverizers, Concentrators, Ore Feeders. Hoisting Engines, Horse Power Hoisting Whims, Water Wheels, Steam Pumps, Ore Cars, Wire Rope, Ore Buckets, Water Buckets, Skips. Blowers and Exhaust Fans, Shafting and Pulleys, Belting, Oils and Mine Supplies. Manganese Steel Shoes and Dies.

Estimates furnished for Complete Plants for Hoisting Works, Smelters, Concentrating and Stamp Mills.

